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THE BEARING OF ILLUSIONS AND HALLUCINATIONS ON TESTIMONY.¹

BY

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In the first place, let me point out the difficulty of defining anything—even the impossibility of so describing one event as to conclusively separate it from all other events. This point may not now detain us for illustration. If the definitions on which we reason and from which we draw our conclusions are illusory to a certain extent, what can we say of the conclusions to which we come? But while it is difficult to make a perfect definition, it must be conceded that definitions—such as we can make—are necessary, in order that we may come to a mutual understanding on questions of medical jurisprudence. It is, therefore, desirable that we frame definitions as to what we mean by illusions and hallucinations.

(1.) *An Illusion is the imagined perception of a real thing.* In which definition perception stands for the act of any one of the senses, whether seeing, hearing, smelling, tasting or touching; or perception in this definition may stand for the act of the moral sense, or the act of the reason itself. To illustrate: If a witness looks at a horse and sees a cow, or looks at a man in a threatening attitude, and having an ink stand in his hand, and sees in the man's hand a pistol, he has an illusion. And if a physician looks at a naturally crooked limb, and concludes that the bone in that limb is broken, or

¹ Read before the New York Society of Medical Jurisprudence, Jan. 11th, 1883.

if he observes a person who is dominated by imagination and passion, and infers that such a person is insane, he also has an illusion.

(2.) *An Hallucination is the real perception of an imagined thing.* In which definition perception stands for the acts of the senses, the moral sense, and the reason. To illustrate : If a witness sees a cow, where there is neither a cow, nor a horse, nor any other animal, or sees a man in a threatening attitude with a pistol in his hand, where there is no man nor anything else, or hears the sounds of voices, where there is no one to speak, he has hallucinations.

Now I am clearly of the opinion that man has a faculty, by which he has a perception of the moral qualities of actions, and that by analogy this faculty may be called the *moral sense*. The question of how we came by this faculty is not now raised. The only competent question is, have we such a faculty? My answer is in the affirmative. And I am also of the opinion that the moral sense may have illusions and hallucinations. If a person commits a wrong or immoral act, under the conviction that it is right and moral, he has an illusion of the *moral sense*. For instance, when Mr. Sickles killed Keys, his moral sense was under the domination of an illusion. If a man imagines that he has committed a murder, when he has not, and gives himself up to the authorities, in order to receive his punishment, he has an hallucination of the moral sense.

So much then seems to be clear; we seem to know by definition and illustration what we mean by illusions and hallucinations. We appreciate the fact that the sense and the reason may be imposed upon by imaginary appearances, *and that testimony may be replete with all kinds of delusions*. But it is also clear, as a matter of observation and knowledge, that we have the sound and the unsound, the sane and the insane. But where shall we draw the dividing line? What

court shall tell us? What commission shall point out for us? What jury shall conclude for us? Where shall we find the boundary between the delusions of the sane and the delusions of the insane?

In this place I seem to hear some one ask: *Do the sane have illusions and hallucinations?* If they do, the subject of testimony, under such circumstances, we must admit, is of the greatest importance. Would any one willingly commit his interests of property and life to a court and jury whose deliberations and conclusions depended on the testimony of witnesses, who did not or could not correct the illusions and hallucinations of the senses and reason? I am not sure but that the illusions of an insane witness would be quite as good evidence as the illusions of a sane witness. In neither case is there the conclusion of fact, but there are the distortion and the perversion of fact. The question of the insane witness, as he has the opportunity to testify for others or for himself, is very important, but I have no time or place now for its discussion.

That the sane have illusions and hallucinations that may affect the reliability of their testimony as given in court, where an issue between litigants is being tried, in order to obtain justice, can no doubt be conclusively shown. Let us set out from a broad and general proposition which is a reliable conclusion drawn from the observations of many right-minded men, and which can meet with no strong opposition, and which cannot be successfully contradicted, namely: *In a great many instances the human sense organs are imperfect and the human reason is deceptive.* If this be so, the action of these organs will be imperfect. They will reach out for the truth, and come back full-handed with error. They will substitute fiction for history. They will pollute the very foundation of justice by putting visions into the place of realities. The well-recognized facts in relation to color-blindness may be mentioned in this place.

How absurd it would be to decide a case at law on the testimony of a witness affected by color-blindness, if the color of a signal on a railroad were in question, need not be insisted on—whether Vanderbilt or Gould had painted or whitewashed the given signal. Courts and juries cannot bring to life the mangled and charred remains of innocent passengers. But when will they deal adequately with the illusions of railroad employees and the hallucinations of railroad magistrates?

Let us consider some of the illusions caused by motion. Do not the sun and stars to-day, as of old, appear to move across the sky from east to west? And yet the eye that sees them move has no insight and no power to correct this illusion. It was only under the tread of the revolutions of the human reason, deprived of its illusions, that this daily illusion has been removed. Who has not looked into the mirrors put up in the ends of rail cars, and felt the car suddenly running backward, as he has seen the images of reflected objects that are on the outside of the car, rapidly receding, as it were, forward? Let him turn his look aside from the objects in the mirror, and his illusion will be corrected so suddenly as to surprise him. Who has not been puzzled at times to find the adjacent wall of the well of an elevator, as the elevator went down quietly and quickly, apparently rushing upward with a somewhat startling velocity, and then have his illusion dispelled by the sudden stopping of the elevator? Did not the butcher, who by accident hung himself on a meat-hook, by the sleeve of his coat, have the illusion that the meat-hook had pierced the flesh of his arm? He could only correct the illusion when he saw that the meat-hook had merely gone through his coat sleeve. If some one else had been the owner of the meat-hook, what a basis for damaged feelings would this butcher have had! Who does not know the story of the King and his favorite,

whom he condemned to die by the axe, and how the King, acting the part of executioner, used a towel instead of an axe, and how he thus killed his favorite, who was the victim of an illusion, that he never corrected?

A friend of mine, a medical man, and a close observer, not long ago saw me in the basement of a house across the street from where he lived. It was in the forenoon, when the light was good, and a man's head is supposed to be clear. In the evening of the same day my friend spoke to me about my being where he had seen me, when I told him he had been mistaken, and had been affected with an illusion, and had not seen me, for I had not been in the place where he said he saw me. He had known me well for years, and pleasantly remarked that there had been no murder committed where he had supposed he saw me. It would have been very difficult to impeach this gentleman's testimony. And yet his testimony might have been sufficient under the proper circumstances to have convicted his friend of a crime he had never committed. Verily, the giving of testimony is after all a somewhat important and serious business.

One day I was in Wall street, when a stranger spoke to me and said it had been some time since he had seen me, and that I had changed some in appearance. He invited me to call at his house and renew old acquaintance, and was very glad to meet me. I told him that he was under an illusion, and that the court ruled out his testimony, and that he had arrested the wrong man, which he finally concluded to be the fact, profusely apologizing for his mistake and obtrusion.

Sir Astley Cooper relates the following anecdote: A butcher, being drawn to serve in the militia, went to the regimental surgeon, and said he had a large rupture, which disabled him, and after inspection the surgeon sent him away. The butcher had made a puncture just above the

scrotum, and had inflated the tissues with his blow-pipe. The man himself mentioned it afterwards as a good joke. This surgeon was afflicted with an illusion. He would have testified that the butcher had a rupture, but he would have been an unreliable witness and an incompetent expert.

Let us take the question of distance. Who can measure distance with the eye or the ear? Is it not impossible for any one to judge accurately of distances? A witness may guess that an object is nearly a certain distance from another object. But if the witness has not measured the distance in question by some known standard of measurement, his evidence will probably be wide of the mark—he will be giving an illusion for a fact. If, for instance, a medical witness is testifying in regard to the size of a limb, in a case of injury, or paralysis, he must not only have a standard of measurement, but he must have a standard measure, in order to be able to testify properly. He owes it to science and justice to exclude every possible cause of illusion. Let me regret that medical witnesses are not always careful on these points. They may disgrace themselves, and prevent a litigant from obtaining justice.

What motive could the administrator of an anæsthetic have but the highest good of his patient? And yet we are told that the administrator of an anæsthetic may, after he has deprived a female patient of sense, sensation and voluntary motion, deprive her of her chastity. And courts and juries have come to such a conclusion, and have entered conviction upon the record. But let me ask, what is the basis of the conclusion? On what does the conviction rest? May not a woman take an oath upon her honor? And may she not take an oath upon her dishonor? Yes, let woman's honor be sacred; and let woe itself fall upon the despoiler of her honor. But let not the hand of him who comes to save from pain and peril be put in ignominious bonds, because of a

woman's lascivious dreams under the soothing powers of anæsthetics! Let not the hallucinations of anæsthesia discolour and distort the testimony of one who comes to swear on the altar of her dishonor; or rather let not the court charge on the validity of such testimony, and let not the jury conclude, even if the judge so charges, to find a verdict on the testimony of an intoxicated woman. For of what validity would be the testimony of a witness who could be proved to have been intoxicated when he saw the actions he would describe while on the witness stand? And why should the witness who has been intoxicated with ether or chloroform have more weight with a court and jury than a witness who has been intoxicated with alcohol? And why should a *litigant-witness* have more weight than any other witness, even though she comes into court to tell the improbable and incredible story of her own dishonor?

I once saw a log weighing about two tons roll down a hill and roll over a boy seven years of age. The boy jumped up and ran off, and was none the worse for his adventure. Some of those who saw it said it was a miracle that the boy was not killed. There was no doubt about the log rolling over the boy, and there was no doubt about the boy being unharmed. Nor was there any doubt but that the boy would have been killed if the weight of the log had for a moment rested on him. That there had been an illusion—instead of a miracle—was perfectly clear. There had been an illusion of the sense of sight. Some of the bystanders did not see that the boy had fallen into a small hollow in the ground, and that the log had only touched his body as it went over him. And what is more: The reason in this case had been imposed upon, in fact there had been an illusion of the reason, or rather as we say, there had been a delusion. The reason did not correct the premises, and there-

upon drew wrong conclusions. *Now suppose the sense organs are the witnesses, giving evidence in court, and that the reason is the jury, listening to the evidence.* Well, the verdict will have to be set aside on account of the character of the evidence.

A man of sound mind was seated in his chamber one evening, when he saw the door open and one of his friends enter, who made a few turns around the table, placed himself before him, and looked at him intently. He arose and advanced a few steps towards his visitor, when the figure vanished, and then he knew it was a vision. The figure soon reappeared with many of his acquaintances, and followed him into his bed-room, greatly disturbing his sleep. On the morrow his physician bled him, and his hallucinations gradually disappeared. To be sure, this man was not a witness; but his affection helps us to understand the condition of those litigants who have been injured in railway accidents, or by falling scaffolds, or through unsafe sidewalks. These litigants come into court and testify as to their subjective sensations. Now, every medical man knows how easy it is to have, when there is a possible basis, on account of an injury, a subjective sensation of pain or muscular disability. Every medical man of experience can call to mind patients who have had hallucinations of the thermic and sensory and muscular nerves, subsequent to the recovery from an injury. Now, I admit the difficulty of such a case. There is in the very nature of things but one witness, and that is the litigant, who can put before the court and jury hallucinations for testimony. The witness is deceived by his own hallucinations, and feels himself cruelly wronged when an expert can properly and successfully expose his actual condition to the court and the jury. And it would be, indeed, a dangerous doctrine to admit that, on the ground of previous good character and credibility, a *litigant-witness* should be fully

trusted and believed, when testifying in regard to subjective sensations. Let us put the best side on this matter, and say that such a witness does not intend to deceive, but is self-deceived, and may thereby deceive others. I recently examined a litigant-witness who had been injured on the street cars of this city, and she repeatedly cried out, as if suffering agonizing pain, when I pretended to touch certain parts of her body, and when the side of the head was placed against the chest, for the purpose of auscultation, she would bear severe pressure with the head, and make no complaint whatever. Now it seems to me that we ought to be permitted to question the credibility of such a witness. There need not be any issue as to the veracity of the witness; and there need be no imputation on the character of a witness who is self-deceived. The doctrine that holds and governs us should be to discriminate how much of the evidence of a litigant-witness comes from subjective sensations that have no real basis of fact; for, if hallucinations are admitted as evidence, the foundations of justice will be destroyed. The temptation, no doubt, would be very great for a litigant-witness to deceive by exaggerating subjective sensations, for such a witness is to be directly benefited by the damages received, and such a witness is the only person who can testify directly on the points at issue. Of course, experts can testify as to the perceptions of such a litigant, but here is where much of the difficulty arises—the more intangible the question to be decided, the more we may expect experts to differ.

Ah! gentlemen, shall we say that the experts have illusions? Well, why not say that? How does the case stand with the experts? Are they agreed? Do they not at most times differ? Some of the celebrated cases of recent date have shown that experts differ. Well, both sides cannot be right—and yet both sides may be wrong. One expert sees the truth in a case so and so. He imagines that he has made

a diagnosis, and that there can be no mistake about his conclusion. And yet he really sees the case in a false aspect. He does not see it as it is, for the real case is far different. Now let me put this point in a word—that is, the expert has an *illusion*, or he may have an *hallucination*. He has the imagined perception of points in a real case, or he has the imagined perception of points in an unreal case. But the expert is no doubt sane. He comes to determine the mental soundness of a litigant-witness. And may not the expert have greater illusions than the one he is called upon to examine? And who does not know that a deluded expert—well, I ought to say mistaken expert—may cause a miscarriage of justice? Just for one moment think of the amazing responsibility of the expert witness! He is to explain what is hidden from others—what they have no other means of knowing. Has he experience? Can he see clearly the nature of the case in question? Does he understand the rational conditions and the logical relations of the hidden points, or does he have an imagined perception of these conditions and relations? In the one instance he is, indeed, under the domination of an illusion—he is deluded. In the other instance he is the clear-sighted witness, the level-headed advisor and the desirable benefactor.

It has not been my intention to exhaust this subject. I have only desired to open it just a little way so that we could look in, and see how we may be affected; that is, benefited, or may be damaged by the illusions and hallucinations of others who may, by accident or design, be called upon to say what they know or what they think they know in regard to an issue that may come before a jury of our countrymen, who have not the skill or the ability to penetrate and see through the testimony, to find out that which is fact and that which has been imagined, to sift the tares from the wheat, and to render a verdict in strict accord with

justice. To be sure, we admit that the only thing the jury can do is to look through the lantern of testimony, for they cannot look through any thing else ; but if the lantern of testimony contains many lights of various colors, the seeing of the jury will not be of that clear and definitive kind that would approximate to the formation of a dignified and noble picture of justice, which has been drawn by a single master-hand, but rather a composite picture that has been sketched by many hands, whose lights and shadows have been impressed under the guidance of illusions and hallucinations.

SOME CLINICAL OBSERVATIONS ON THREE CASES OF PROGRESSIVE PARESIS IN THEIR EARLY STAGE.

BY

HENRY HOWARD, M. R. C. S., England,

Government Visiting Physician to the Longue Point Lunatic Asylum, Province of Quebec, Canada ; Author of *The Philosophy of Insanity, Crime and Responsibility.*

Case 1.—J. P——, aged 46 ; married ; no children ; came to my office in the month of March, 1881. History, as far as his wife knew. Was conductor on a railroad passenger car for the past eight years ; lately got leave of absence for a couple of months ; found his memory bad, sometimes forgot to punch his tickets ; suffered from insomnia ; was very fidgety ; could not keep quiet ; was a great dyspeptic, and was under medical treatment for that disease for some time, but received no benefit. He was always a good man ; never drank but very little ; never drunk ; very religious, but lately much more so, indeed, too much so ; for the last few weeks she found he was impotent. He was not cross, but she could not keep him in the house ; he was always wanting to be on the move, and lately began to believe he was a very rich man, having money and property to any amount.

Examination.—I found the man strong and steady on his limbs ; that he could walk well ; also that the movements of his arms were normal, with normal grasp of the hands. There was a little hesitation in his speech, but not sufficient to attract the notice of an ordinary observer. At that time there was no tremor of the upper lip, which appeared at a later

period. Pupils were normal, but sluggish, and did not well obey the stimulus of light. Patellar reflex nil, respiration normal, pulse normal, partial anæsthesia, temperature 96 2-5. He did not talk much; spoke of his business, and that he was rich. I prescribed for him iodide of potash, but at the same time told the wife that his disease was a very bad one, and that I saw little or no hope of recovery. I diagnosed progressive paresis in the early stage.

Naturally the wife was not pleased with my prognosis, and in a month afterwards I found him a private patient in the asylum, and was informed he was becoming quite well, and that his wife was very happy and pleased that she brought him to the asylum. Next I heard of him was that he was discharged quite recovered. When again I heard of him was on the 10th of August, 1881, when I admitted him, a government patient; there was then no difficulty to the most ordinary observer in perceiving that the man had rapidly run into a state of general paralysis, with sudden attacks of mania. I have ever since seen him regularly, once a week; seen him gradually sink into general paralysis till he has become a poor dirty dement, and I expect death will soon close the history of a rapid case of general paralysis.

I know nothing of what his medical treatment has been. In my official capacity there is no obligation to report the treatment to me.

Case 2.—On the 3d of April, 1881, there was admitted into the asylum as a government patient, A———M———, aged 44; married, and father of a family; a medical man suffering from an attack of acute mania, his papers said caused by drink. I was told that in his youth he was unfortunate and had syphilis, but never drank, and during his married life was a man of most exemplary character, but for some months he acquired the habit of drink, and finally became an inebriate, which ended in insanity. One of my duties is to examine all patients

admitted under the pay of the government, and report to the government every month the mental state of all admitted during the month. After the violence of his attacks had subsided I made a clinical examination of him. He had perfect use of his legs and arms, but from the keeper's account appeared impotent; there was very slight hesitation of speech, upper lip and tongue tremulous, knee-jerk exaggerated, pupils normal in shape, but sluggish in action, general anæsthesia, insomnia, pulse 80, axillary temperature 96. He told me he was worth millions of money; he would give me a million; he was not in the asylum as a patient, but came to assist me. My diagnosis was progressive paresis. I saw the poor fellow every week from that till he died on the 4th of January, 1883, after successive attacks of pseudo epilepsy. For fully twelve months he had been a poor dirty and wet dement. The last time I saw and spoke to him was the 28th of December, 1882. I was glad when his death was reported. There was no *post-mortem*.

Case 3.—On the 16th of November, 1882, I was called upon by a medical friend to see one of his patients in consultation. *History:* The man was aged 48; married, and had a family. He came from a most respectable family, and was a good, upright, honest man. Self and family well known to the writer; never intemperate, but had syphilis when young; received a blow on the head a few years before; never complained much of it, but since then was, what his wife termed, queer, over-zealous in his religious duties; was always of a speculative nature, but much more so lately; was impotent for nearly two years, which greatly troubled him, and he had got medicines from many doctors to cure him of this trouble. When my friend, Dr. ———, was called in to see him, he found him very much excited, very good-natured to every one, but could not be kept quiet. He was worth millions of money,

and was going to make millions more. He was particularly bent upon providing for all the poor in the whole world. He had put him upon bromide of potass. and hyd. chloral, but he found him getting worse.

When I saw the poor fellow he recognized me at once, and at once proposed to give me five thousand dollars and a pair of horses. "There is nothing the matter with me, Doctor, but that I have lost my manhood, and I am sorry for the sake of my poor little wife, but Dr. ——— is going to cure me, and I will give him ten thousand dollars." Thus he rattled on, talking of all he was going to do. The first thing that struck me was that his breathing was very rapid, and that at each respiration there was a whistling sound from larynx, and that the saliva occasionally got into the trachea, causing fits of coughing. From these symptoms I concluded there was, to a greater or lesser degree, paralysis of the laryngeal cords, and I might add the vocal, for his voice was very much changed. He was as active as ever on his legs, and the use of his arms were normal, but there was no knee-jerk; tongue when protruded was tremulous, and there was occasionally a slight tremor of the upper lip; the right pupil was contracted, and the left dilated; neither obeyed the stimulus of light; his pulse was 90, and temperature, both axillary and mouth, 97 2-5. I diagnosed progressive paresis; lesion probably due to syphilis or the blow, or a combination of both. I again saw him on the 22d; found him in every respect the same; pulse, 90; temperature, 96 1-5. On 23d, pulse, 90; temperature, 97; very much excited, and was sent to the asylum. On 26th, pulse, 90; temperature, 97. On 30th of November, pulse, 90; temperature, 97 1-5. December 11th, pulse, 72; temperature, 97. December 22d, I found him in bed to-day suffering from slight bronchitis; his pulse was 120; temperature, 90 4-5. I told the Sister in charge to call the attention of the resident

physician to the case. Since that time I have been greatly occupied with monthly reports, auditing quarterly accounts, and making my annual report to the government, so I have not been able to see him till this day, January 11th, 1883. Found no change whatever in the psychological aspect of the disease; pulse, 90; temperature, 97.2-5.

Remarks:

Case 1.—Why should this man, who had always been a temperate, well-living man, get an attack of progressive paresis? Was it in any way due to a neurosis? Was it trauma, and if so, what was the trauma?

To the first question I would answer, one thing is certain, there must have been a breach of nature's laws in some way, although what it was we do not know. The second question we cannot answer in the absence of family history, and his wife knew nothing of their history. To the third question I would assume trauma. Men who earn their livelihood in the employment of railroad companies, and who, as this man did, work up from a low position to be conductors, generally get pretty well knocked about, and often forget the injuries they have received. Then, as conductor of cars, it is very possible that a man so much on his feet, when trains are running, may very frequently receive severe shocks which would cause concussion of the brain to a greater or lesser degree, and thus lay the foundation of progressive paresis. The conviction forces itself upon me that the case was one of traumatism.

Case 2.—This man was admitted as a case of toxic mania—cause, stimulants. There was not in his papers the slightest hint of his having been a paretic. I could learn little or nothing of his family history. The question in this case is, was the drink the cause of the insanity, or the insanity the cause of the drink? I think the latter. No man who had

led a temperate life could suddenly become an inebriate without physical cause to produce the change. Such a transformation would be contrary to reason and natural law. The nerve lesion which produced the mania and the paresis was, in my opinion, due to syphilis, and the inebriety was the outcome of the insanity, and not the cause.

I do not mean to say that inebriety could not cause mania and progressive paresis; but that no temperate man could suddenly become an inebriate, except as the result of some physical change in the nerve-centre. After ignorance, the breach of natural laws are generally due to some physical defect in the mental organization. In this case the physical defect was pathological, no doubt, from syphilis.

Case 3.—There can be no doubt but that this case is one of trauma, either from syphilis or the blow on the head, or both combined. Probably there was syphilitic deposit, creating a neurosis, and thus was it easier for the blow to produce a lesion, which finally resulted in mania and paresis.

Wherein were these three cases similar and dissimilar? They were similar that in all there was, in the early stage, marked impotency, thus proving that the motor powers of the sexual organs are governed by the motor-centres in the brain, and that these centres must closely approximate the organ of intelligence or of consciousness. Again, all of the three had sexual desire. Indeed, the poor fellow (*Case 3*) suffered most fearfully in this respect, for he is very fond of his wife. I wish to draw particular attention to these facts in this present age, when so many tracts and bawdy pamphlets are distributed, making it appear that all diseases are due to sexual desire, and curable by excising the clitoris of the female and the foreskin of the male, another phase of the moral insanity question, making morality independent of intelligence, because they will not recognize what constitutes true intelligence.

They were similar, that in all the mania preceded the paralysis, showing that the organ of consciousness was affected before the motor-centres, for even before impotency declared itself their wives, and other members of their families, observed something peculiar in their manner that they could not well explain. The pulse might be called normal in all these cases, and temperature abnormal—that is, the temperature in all the cases below par. In all the cases there was mental exaltation, all had similar delusions of greatness and riches. After a certain period all had more or less abnormal pupils; all had more or less tongue tremor, more or less hesitation of speech. The one who died and the one about to die had convulsions of some sort, no doubt pseudo epileptic.

Dissimilar: One in the early stage became an inebriate—well for him he did not become a homicide, instead of an inebriate, when he would have been hanged as a sane man that knew right from wrong. The other two did not become inebriates. In two the patellar reflex was nil; in one there was knee-jerk exaggerated.

From the foregoing it is conclusive that from clinical observations we can find proofs of mania in the paretic long before we can observe any symptoms of derangement in the motor-centres, but not, I think, before we can observe it in his conduct.

Therefore, as in all other cases of insanity, so in progressive paresis, it is conduct that gives us the first clew to the person's altered condition. This is unfortunate for homicides and suicides, but nevertheless true.

THE CASE OF MAGGIE KEPPEL, THE BROOKLYN CHILD-ABDUCTOR.

BY

LANDON CARTER GRAY, M. D.,

Professor of Mental and Nervous Diseases and Electro-therapy, New York Polyclinic ; Physician-in-Chief to Department of Mental and Nervous Disease and Electro-therapy, St. Mary's Hospital, Brooklyn.

In May last (1882), I was requested by my friend, the Hon. Foster L. Backus, Assistant District Attorney of Kings county, to examine a prisoner who was awaiting sentence in the Brooklyn city jail. She had been tried before Judge Henry A. Moore, of the Court of Sessions, whose sense of justice and whose humanity, as I am glad to have this public opportunity of saying, are ever too keenly on the alert to be swayed by popular or professional prejudice, and who, suspecting mental aberration in the girl, had agreed to abide the result of my examination. I found my prisoner to be a female of 20, of medium height, well and rather sturdily built, healthy-looking, with a frank, girlish countenance. She had been accused of the heinous crime of stealing a small towel in the house wherein she was boarding. The evidence of the theft was so complete that she had been advised to plead that she took the towel because she required it at her menstrual period, which was then present, but she could not be prevailed upon to resort to this subterfuge. It was thought that when put on the witness-stand, she would not be proof against the temptation offered by this possible means of escape, and so the question was asked her ; but she steadfastly adhered to the truth. She was, therefore, con-

victed. Her brother and mother informed me that about two years before they had begun to notice a great alteration in her demeanor. Hitherto docile and orderly, she became impatient and fretful; began to steal money and various articles around her mother's house, and finally left home, giving her brother and mother no clew to her whereabouts, until she was arrested for this theft. When I asked her why she stole these things, she said she did not know; could not help it; could see no harm in it, as other people took things from her; had not been aware that she would be punished; was now aware of it; then she burst out crying, and told me that she had left home because her mother did not love her as much as she had done. She complained bitterly of the profanity and obscenity of the women in the jail. Careful inquiry convinced me that she had always been a perfectly virtuous, truthful and affectionate girl. During my prolonged conversation with her, during which I endeavored in every possible way to analyze her statements, I could discern no attempt at concealment. But her manner was peculiar. Prompt in her answers and fairly intelligent, there was an earnest, puzzled look upon her face, as if she did not realize her position. She had no delusions, hallucinations or illusions whatever. Her memory was confused. She would, for example, recollect perfectly certain past events, and yet be unable to recall others for a moment, until she was reminded of certain circumstances, when the full memory would seem to rush upon her. I would have it distinctly understood that in these efforts of memory there was not the slightest evidence of subterfuge. After she had left home, she had gone to New York and gotten employment, leading a quiet, virtuous life, and obtaining the reputation of an industrious, rather reserved girl. Her mother was an old woman, of a very low order of intellect, decidedly eccentric, Irish by birth. Her brother was an industrious young man, fairly intelligent, of a mind that

alienists will recognize when I term it "the maniacal mind;" in other words, it was unusually bright and quick so far as it went, but of limited range and easily confused.

I had no hesitation in pronouncing the girl insane, and she was released. It was promised that she should be sent to my clinic for treatment; but she never came more than twice.

In the latter part of last August the whole country was startled by the story of the abduction of a child that had been playing in front of its parents' house in Brooklyn. We all remember the wide-spread excitement, coming as it did while the memory of the mysterious fate of Charley Ross was fresh in our minds. After several days of public anxiety and great effort on the part of the police, I was one evening hailed with the double tidings that the child had been found, as well as her abductor, who turned out to be my quondam patient of towel-stealing fame, the unfortunate Maggie Keppel, whose name is now so unenviably known. Shortly afterward, at the request of her counsel, I visited her in jail, in company with Dr. E. F. Lindridge, and found her former symptoms more pronounced. She had the same open countenance, the same *distract* air, except that it now partook of what one might more precisely term a slight bewilderment. Moreover, she seemed now to be more on the defensive, which was not surprising, considering the ordeal through which she had passed at the hands of detectives, police officers, reporters, and a generous-minded mob who had lavishly hooted her on her way to the justice's court. She seemed to have a dim glimmering of pride in her sudden celebrity. Whilst we were examining her, word was brought that some persons, who thought they had seen her with the child, were outside to identify her. A number of female prisoners were sent for. She was made to exchange clothing with one of them, and the would-be identifiers were ushered in.

During the ensuing scrutiny of face after face, her manner presented a marked contrast to that of the other women. Whilst they were of the ordinary vulgar, flippant, brazen type that is common to the female inmate of a jail, she maintained her quiet, modest, semi-abstracted mien, with eyes looking frankly at her visitors, until finally one woman stepped close up to her and looked at her steadfastly and keenly, when a flush crept over her face and brow.

I elicited from her and from various other sources the following story :

She maintained that she had not taken the child from in front of its home in Brooklyn, but had found it in Henry street, in New York, crying and alone. She took it with her, and came over to Brooklyn to her mother's house, reaching there about 10 o'clock, P. M. ; but she found the door locked, and not having her night-key, was afraid to wake her mother or brother, who had often scolded her for coming home late, so she started to go to New York. She met a man whom she knew, named McLaughlin, asked some directions of him, went with him and had something to drink, when the trio went to New York, to go to her sister's. Desiring to get rid of McLaughlin, who persisted in accompanying her, she went to a house in 26th street, and told him that her sister lived there, saying : " I'll ring the bell, but I'm afraid my sister will see you and know you." McLaughlin took the hint, and left her, but waited some little distance off. Presently he saw the girl and child coming toward him ; she seemed surprised to meet him again. " So you are barred out ? " he said. " Yes," she answered ; " but I'm going up here on Third avenue to get a key for the house." McLaughlin, as he himself admits, thought that the second hint was broader than the first, and, as he had only seven cents in his pocket, decided, with great self-abnegation, to go home. Where she spent this first night

cannot be ascertained. The next morning she went to Fort Lee, spending the day there, and returning in the afternoon.

She was next seen by a man named Collins, who, standing in his doorway in Catharine street, about 11:30 P. M., was accosted by a woman, who led a child by the hand, and who inquired where she could get a furnished room. Finding no accommodation in the neighborhood, she asked Collins' sister who he was, and whether he would show her the way to the Cortlandt street ferry, which he did at his sister's request. As they walked into the ferry-house the child's collar dropped off, and Collins called her attention to it. She hastily replied: "Never mind, let it go."

The child said: "I have plenty more at home."

"Yes," she is said to have answered, "if you ever live to get there."

This remark startled Collins, and led to his communicating with the police.

The woman then crossed over to Jersey City, and was next heard of at a hotel, a few blocks distant from the ferry. The hotel clerk told the following story:

"I was dozing in the chair about 1 o'clock this morning, when there came a timid rap on the window; I looked out and saw a woman dressed in black and a little girl in white standing there. The woman said, 'I have been walking a great way and am very tired; can you give me a bed for the remainder of the night?' I gave her room No. 2, on the second floor, and she gave me the name of Mrs. K. Nevins to sign in the register. She retired with the child and did not leave the room until 1 o'clock to-day. She then went away, telling me that she would soon call back and pay me. I did not see her again."

The next trace of her was at a restaurant in the same city. Three hours after leaving the hotel, she and the child entered this restaurant, and ordered a meal of the value

of forty cents. The child was much fatigued and fell asleep at the table. After remaining in the place about an hour, the woman said to the restaurant keeper:

"I have a check for forty cents, and have been waiting for half an hour for this little girl's uncle to meet us and pay the bill."

"Who is her uncle?" asked the proprietor.

"Mr. Silver, the druggist," she replied.

The proprietor said he did not know Mr. Silver, and asked her to remain until he came. It appears that there was a Mr. Silver, a druggist, in the neighborhood, and she had probably seen his name in passing along the street. The woman and child soon left the restaurant; were next heard of inquiring of a police officer where she could obtain a cheap lodging; and that same evening late returned to her mother's house in Brooklyn, went to bed with the child, and was arrested the next morning whilst still in bed.

She steadfastly maintained that she found the child in New York; and while it is probable that she really took it from in front of its home in Brooklyn, it has not been proven that such was the fact. She could not understand why "such a fuss," as she expressed it, was made about it. Indeed, she said she thought she was being very poorly rewarded for all the trouble she had had about the child, who appeared very fond of her, calling her "Auntie," and whom she appears to have treated with gentleness and kindness. Her stories to different persons were contradictory, often so to the shallowest extent, as in the following conversation with the Superintendent of Police:

"What were you doing in New York?"

"I called to see a lady friend in Madison street."

"Where did she live in Madison street?"

"Oh! she has moved away."

"What was her name?"

"Madison."

To which the Superintendent very sensibly rejoined :

"She lived in Madison street, and her name was Madison ! That will do."

Her peculiar manner, which, accurately indescribable as it really is, I have yet attempted to describe, made the impression on a number of the officials that she was insane. How much is conscious lying, and how much is mental confusion, it is impossible to tell at any moment ; because, side by side with unquestionable mendacity, is an equally unmistakable mental confusion, which is manifest in the very futility and silliness of the mendacity. Dr. Lindridge related to me a significant incident that he observed after I had left. When she was about to leave the visitors' room of the jail, into which she had been brought for our convenience, she picked up a Bible lying on the table, and was carrying it off with her, when Dr. Lindridge reminded her that the book did not belong to her, to which she rejoined, with an injured manner, that she did not see why she had not as good a right to it as any one else.

There was nothing whatever to show that she had made the faintest attempt to obtain a reward, or to use the child for pecuniary purposes, or even to elude pursuit, any danger of which had not seemed to occur to her.

Yesterday (January 10th), I visited her in the jail, where this poor insane creature is still confined, four months after her arrest, without having been brought to trial. I found her still more deteriorated mentally. Her mind is a blank in regard to many of the details which I have just narrated. There is also a marked tendency to incoherence in her conversation. The woman in charge of the female prisoners gave me some interesting particulars regarding her behavior in jail. She is "absent-minded," as it is termed ; is very forgetful ; forgets that she has had her meals, that she has washed her clothes, etc. ; whilst neat about her dress, will wash herself

with the contents of the cup from which she has been drinking; is very irritable; steals everything, large and small, upon which she can lay hands. Upon one occasion she came near causing as much excitement in the jail as she had in the outside world. A female witness, who was detained in the jail, became insane, and ultimately so violent that she had to be barred in her cell. Seeing Maggie Keppel pass along the corridor, she shouted to her to bring her a light, which Maggie did by twisting up some paper, lighting it at the gas, and handing it in through the bars. The straw in the cell was immediately set afire, a great blaze ensued, and the maniac came near being burnt to death.

There can be no question as to the insanity of this woman. She is indubitably a case of chronic mania, of that variety for which the happy designation has been suggested by Dr. E. C. Spitzka, of Chronic Mania, with Confusion of Ideas. Her thieving tendencies are but one of the many symptoms induced by the underlying disease, in this particular differing radically from kleptomania, pure and simple, in which the tendency to theft is the only, or almost the only, symptom of mental aberration, and is of the nature of an uncontrollable impulse, such as has been so fully described by Marc,¹ and such as that of the Austrian government employé who stole nothing but household utensils, with them filling two rooms which he had hired for the purpose, neither selling nor making any use of them; or such as that of Victor Amadeus, King of Sardinia, who pilfered small articles on every occasion; or such as the wife of the celebrated Gaubius, who, whenever she bought anything, also invariably stole something; or the physician spoken of by Lavater, who never left a patient's room without purloining something; or of the other physician, described by Marc, who had a passion for surreptitiously

¹ De la folie considérée dans ses rapports avec les questions médico-judiciaires. Paris, 1840.

obtaining table-covers.¹ Maggie Keppel presents a type of mental disease of which many other exemplars could doubtless be found in our criminal institutions, were a competent alienist to make an analytical progress through them. They pass unrecognized before the careless eyes of the officers of our police courts; and too often does it happen, even in the higher tribunals, where more leisurely and elaborate investigations are instituted, that confusing and incompetent testimony, given before confused and incompetent juries, leads to a conclusion unwarranted by the facts. The lawyer, on or off the bench, cannot be readily made to recognize the fact that insanity may exist without delusion, hallucination or illusion; and this idea is an entirely strange one to the average lay mind. Yet most cases of insanity will begin in this way. There are, to be sure, indubitable signs that can be recognized by the experienced physician, the grouping of which would carry weight to the trained professional mind, but which leave no impression on the mind of the juryman or the lawyer, who, in this technical particular, stand upon a lower level of education. Suppose, to illustrate my meaning, that last May, instead of stealing the towel, Maggie Keppel had stolen little Lizzie Selden. There was then nothing to point to her insanity but the indefinable manner of which I have spoken, and the fact that her character had undergone a change some two years before; whilst, instead of a refusal to lie, as in the towel matter, she would very probably, frightened by the threatening scenes through which she had passed, have told a dozen contradictory stories about how she had found the child. Suppose she had been brought into court and vigorously prosecuted, as we have seen persons prosecuted in this country, how far would her indefinable manner have weighed with the jury or the public? How much weight would have

¹ Morel, *Traité des maladies mentales*. Paris, 1860; p. 409.

been attached to her change of character some two years before? Or, to illustrate my meaning again, permit me to speak of a boy of 14, who was brought to me several years ago, because of a commencing epilepsy. He was a very bright boy, and his convulsions came at long intervals. One day his father and mother walked into my office in great distress to inform me that the lad had been steadily robbing his employer of small sums of money. I asked if he had robbed them, upon which they bethought themselves that they had missed numerous articles. The boy himself, with perfect calmness and apparent innocence, steadfastly denied the thefts, and would not confess until he was caught in the act. I had great difficulty in persuading the father and mother that this was the result of his disease. They could not be made to understand how a boy could be so unusually intelligent and have such few fits, and yet be really irresponsible for his acts; and, until the march of his malady had made his real condition unquestionable, they could not be made to realize that theft might spring from disease as well as turpitude.

I hope that this case may help to elucidate that question of vast scientific, humanitarian and practical importance, the relation of crime to mental disease—a question which, it seems to me, might well, in all its ramifications and its limitations, occupy the attention of a Society like this.

But there is another aspect to this matter. Whilst I am fully aware of the dangerous tendencies of such a lunatic as Maggie Keppel, who, in another phase of her malady, might have murdered the child as readily as she had stolen it, and whilst I think she ought to be confined in an asylum for the rest of her life, yet the spectacle of this poor creature, aimlessly wandering about in accordance with her insane vagaries, looking out upon the world as through a veil, mistily, the sport of her heredity and her organism, has to

me a pathos that surpasses all more abstract considerations, and it ought to teach a larger humanity and a more unprejudiced philanthropy than are taught by creed or shibboleth.

A CASE OF SYPHILOMA OF THE RIGHT VERTEBRAL, WITH THROMBOSIS OF THE BASILAR ARTERY¹.

BY

LEONARD WEBER, M. D., of New York.

S. B. —, aged 42; single; merchant; came to my office November 9, 1878. He was a small, somewhat stout man. For a few weeks previous to his visit he had felt unusually tired and weak; was losing his appetite; had occasional nausea; irregular action of the bowels, and frequent headaches of the nature of painful pressure on top of head, and disturbed sleep. His complaints were many, in fact, out of proportion to the rather meagre result of the physical examination. In prescribing for him I paid attention to the state of the gastro-intestinal organs, also ordered a dose of bromide of sodium at bed-time. He returned on the morning of November 21, saying that he felt no better; had vertigo and a constant roaring noise in both his ears; numbness of right leg, and the pressure on top of head had increased. Noticing that the patient looked quite ill and walked with difficulty, dragging the right leg a little in doing so, I sent him back to his house in a carriage, and called to see him at noon. I found paresis of the right upper and lower extremities; also of the right half of the face and tongue; eye-sight normal; no strabismus; speech normal. He was able to void his urine, and his bowels were evacuated by a simple enema an hour before my visit. Vertigo continued; also pressure on top of head; no pain anywhere else; no muscular twitchings. On questioning him with regard to syphilis, he admitted having had

¹ Read before the New York Neurological Society, January 2, 1883.

a small sore on his penis twelve years ago, which was not indurated, healed within a week, and was not followed by any of the usual secondary symptoms, as he alleged. But four years after, and without any traumatic influences, an ulcer developed right above the heel and to the left and right of the tendo-Achilles of his left foot, growing to a considerable size and refusing to heal for many months. The specific nature of the ulcer was finally suspected, and he was put on mercury and iodide of potassium, when the sore improved in appearance and gradually cicatrized. I noticed a large polygonal grayish-white cicatrix on the place referred to, and two small round cicatrices of a brownish color on the other leg. That the patient presented symptoms of cerebral or cerebro-meningeal lesions, was evident. That the supposed lesion might be due to syphilitic disease of the arteries, meninges, or substance of the brain, was probable; the more so, as there was no evidence of any other organic disease causing embolism or cerebral hemorrhage. He was ordered to take 10 grains of the iodide of potassium every two hours. At 10 P. M. of the same day he was in *statu quo*. Dr. Wyeth, of this city, was requested to see him with me, and agreed as to the probable diagnosis and the course of treatment adopted. At five in the morning of the 22d of November he was taken with a terrible fit of general convulsions. While this paroxysm lasted, cyanosis developed, and became so intense that his face became almost black. He lost consciousness after the first attack. The convulsions returned about every half hour subsequently, and he died in deep coma at half-past ten the same morning. The autopsy was made at eleven o'clock of the following morning (November 23), and limited to the head. The veins of the integuments of the head were more than usually filled with blood; the skull-cap of more than average thickness; the dura mater and leptomeninges showed marked venous congestion; the subarachnoidal

spaces all over the surface of the brain were filled with clear serum, with small flakes of coagulated lymph here and there. After removing the brain and proceeding further in the inspection of the arteries, no evidence of disease of any larger branch was found until we looked at the basilar artery. This vessel was filled completely with a firm clot, starting from the place of union of the two vertebral about an inch upwards. On making a longitudinal section we cut into a dense little tumor growing from the inner walls of the right vertebral, just at the junction with its fellow, and almost completely obliterating the lumen of the basilar artery at the very beginning of its course. A microscopic examination showed the tumor to be composed of small cells and connective tissue, corresponding in its character to that of the similar gummatous neoplasms of the cerebral arteries as described by Heubner and others.

We further noticed a small but sharp exostosis in the left fossa occipitalis, and an indurated patch half an inch square, involving the dura mater in the region of the os basillare. The crista galli was found to be unusually long, sending a number of osseous stalactites into the falciform process of the dura mater. In the substance of the brain nothing abnormal was found.

In examining the specimen of the basilar with portions of the two vertebral arteries, it will be seen that the thrombus extends from the junction of both vertebral an inch or so upwards, depriving the medulla oblongata of the supply of arterial blood, and causing the death of the patient.

The above case would furnish additional proof, if there were any need of it, to show how insidious syphilis can be, when it attacks the cerebral arteries or the brain itself. As far as I know, but few cases of a similar kind have been placed on record.

136 West 34th street.

THE PSYCHICAL EFFECTS OF NERVE-STRETCHING.

BY

JAS. G. KIERNAN, M. D., of Chicago, Ill.

The influence of the mind on the organic neuroses has been to some extent discussed, but when this influence enters the domain of therapeutics it is generally ignored. Cases have been reported in which "organic spinal disease" was "improved" by sitting under blue glass. The French alienist, Ball, has temporarily "cured" consecutive auditory hallucinations by removing aural disease or impacted cerumen, producing thereby a relatively dominating healthy series of perceptions, which for the time being tintured the patient's mentality. The daily papers are at present replete with "faith cures" of all descriptions. There are few neurologists who have not had under observation hysterical neuroses which had been "cured" while the glamour of the particular operation or glynæcologist lasted. I myself have observed epileptic patients, who had been treated with "success" by many a leading European neurologist, yet who died epileptic lunatics in a pauper asylum. Electricity seems to work many of its wonders through its effect on the imagination, as witness the following case reported by Clevenger.¹

"A thoroughly educated gentleman, who had been a professor of chemistry in a college in this State, was suffering from spinal sclerosis. Daily applications of electricity were made to special groups of muscles, after Duchenne's method, and finally application of the descending galvanic current to his spine. He never failed to respond to the soothing influence of the current, and every evening fell into a profound slumber after a few minutes' treatment in this way. Finally something happened to shake Dr.

¹ Chicago *Medical Journal and Examiner*, November, 1881.

Clevenger's belief in electricity as a hypnotic. After holding the wet sponges to his back as usual, patiently, and seeing that he had fallen asleep as he always did, Dr. Clevenger folded up the wires and turned to let down the cups from contact with the plates, and discovered that they had not been lifted at all. No current whatever had been passing."

My attention has been directed to the question of a similar psychical element, entering into the beneficial effects of nerve-stretching, by the results obtained in a case of multiple cerebral sclerosis, which came under my observation. The patient had been with me for some months. He was a man of twenty-one, well built and well nourished, and gave the following history. He had at the age of sixteen been attacked by typhus fever. During the delirium of this disease he was seized by an apoplectiform convulsion; on recovery from this his right hand became, as he expressed, "somewhat shaky," especially when he tried to use it for any purpose. This "shakiness" had at first occurred only in "spells," but became permanent, and gradually extended, until it involved the whole arm, and finally the lower extremity on the same side also the facial muscles. The patient was irritable and depressed; he complained much of cephalalgia, and was addicted to the use of paregoric. The hereditary history was unattainable. I had placed him under barium chloride, hyoscyamus and conium, but without any apparent effect. I was obliged to be absent from the city, and for two months lost sight of the patient. He called on me upon my return, and was markedly improved; so markedly that I was at a loss to account for it. He informed me that he had gone to an irregular practitioner, who had given him a certificate that he had stretched the "posterior cord of the brachial plexus." On examining the wound I found that a very superficial incision had been made over and parallel with the centre of the clavicle. The man had been previously etherized. The tremor hitherto existing had dis-

appeared; the patient was able to write, which he had not been able to do since his illness; he was able to walk without being started, as had been done when I last saw him. These effects remained for six months, at the end of which time the arm tremor returned, and, to a slight extent, the impaired gait also.

It may be claimed that this was a remission merely of the multiple cerebral sclerosis not related to the "nerve stretching." The rapid improvement after the "operation" showed that there was a relation between the two. There is no mechanical effect which could be produced by the simple incision over the clavicle. A derivative action is also out of the question. We are therefore reduced to the consideration of the psychical effect of the alleged operation, and this, it seems to me, was all potent in producing the improvement described. The question of the force used in nerve-stretching, the possible dangers of the operation, etc., have all been passed in review, but the psychical element of the operation has not been considered. That there is such an influence the case just narrated proves, albeit the neurosis be one in which a strong exercise of the will at times works temporary wonders. The patient can often control the tremor for a time on being commanded so to do. My patient had, however, passed beyond this stage at the time he was first seen by me. While not claiming too much for the present case, I believe I am fully justified in offering it as an explanation of many evanescent curative wonders worked by nerve-stretching.

NOTE.—Dr. Westphal "believes the so-called results are the effect, psychologically, upon the patient undergoing a great operation, which he is assured must prove successful in his case; and from the sanguine view which ataxic patients take of their condition, they are only too ready to believe themselves better if required."

CASES OF PATIENTS TREPHINED FOR TRAUMATIC EPILEPSY, WITH REMARKS.¹

BY

S. N. LEO, M. D.,

Visiting Physician to the Hospital for Nervous Diseases, Blackwell's Island, Etc.

Being accorded the privilege of submitting the results in trephining two subjects who suffered from epileptic seizures due to injuries received on the head, I am not loath to avail myself of the opportunity to direct your notice to some consideration of an operation that has been viewed, under the circumstances which affected my cases, with a disfavor not alone unwarrantable, but acting as a check to many surgeons, who, rather than violate the traditional views of a large number of writers and teachers, permit themselves to be influenced by such ideas, and so fail to assume an aggressive treatment more suitable. In this assertion I do not hesitate to defer and allot all that properly belongs to conservative surgery, but in straining such measures we overstretch and are apt to warp the resources of those who practice the healing art. Of the operation itself and the procedure involved, which call for the exercise of skill and care in the manipulation of the instruments used, it is not requisite to further speak. But it may not be amiss to state that in the selection of a site on which to base the opening, deference should be paid to the existing anatomical relations; though, if absolutely essential, there need be no hesitancy of our right to involve any of the sinuses, despite all that has been urged by those who favor and on very slight pro-

¹ Read before the New York Neurological Society, February 6, 1883.

vocation practice their much vaunted antiphlogistic treatment.

As opposed to this, however, there is much recorded experience, deserving a better judgment. The only limit at which I would pause would be because of old age, a prior enfeebled state of the general system, and where so extensive a tract of injury to the brain, its membranes or contiguous parts may exist, as to preclude all hope. It is a little singular, however, that where we have epilepsy or convulsions as a sequence, and the application of the trephine is consequently proper, it is very rarely necessary to attack the centre of the forehead, behind which is usually found the prominent spine of the os frontis.

Among those on whom I operated in the month of November, 1880, was one Henry S——, peddler, aged 40 years, native of Poland, single, who came to this country from England.

At the time I was called in to see the patient, eleven o'clock A. M., he was almost exhausted, having had no less than fourteen characteristic epileptic fits within four hours, with continuous convulsive twitchings on the right side. But little could be gleaned from him or his previous history then, though he gave me to understand that he had terrible pain on the left side of his head, almost circumscribed to an angle between the squamous and coronal sutures, slightly above the former; and a friend volunteered the information that it was all due to a blow, which had been inflicted by a companion with a heavy stick, some four years prior, and which the sufferer claimed, in his few lucid intervals, caused his trouble. European physicians of pronounced eminence said it was a singular but incurable case, and had prescribed a variety of treatment, which only afforded temporary relief. The pupil on the left side was dilated, while that on the right was contracted. There was no swelling or change over the supposed site of injury, excepting a slightly abraded surface about half an inch in circumference, uncovered by hair, and where, it was stoutly maintained, he had received the blow previously mentioned. There was ptosis of the left eyelid, loss of power in the left hand and leg, slight paralysis of vesical and sphincter muscles, labored respiration, and with great difficulty could food be swallowed. The heart's action was irregular, and as the same state of affairs

had continued, on and off, without any amelioration for nearly three days, at the request of those present I determined to trephine within the ensuing twenty four hours, and performed the operation accordingly, under the most adverse circumstances. An anæsthetic was administered with caution, after which a small trephine was employed. But no sooner had I raised the circular piece of bone than about half a wine-glass of serous, yellow-looking fluid oozed out of the opening, and dribbled away. There was considerable hemorrhage, which welled up again and again in the cavity, and that finally yielded to ice applications. An inspection of the dura mater did not reveal a rupture of the membrane or any artery. The operation lasted thirty minutes, the wound being carefully dressed, when suddenly the patient was seized with vomiting, and for half an hour became nearly pulseless. This passed off, however, and the man had but one attack that evening.

The next day he felt much better, *no fits*. On the third day following the operation had but a slight attack, sight improved, regained control of all his muscles, spoke rationally, pain in the head all gone, and from that time on continued to mend, and with the exception of a troublesome facial neuralgia, extending over the whole right side, did well, and he eventually resumed his business.

Lawrence W——n, aged 25 ; married ; U. S. ; cigar maker. Admitted August 5th, 1882, to Charity Hospital, my Assistant Resident Physician, Dr. O'Brien, kindly furnishing the following :

Family History.—Father was paralyzed and dropsical. Mother still living and healthy. None of the family known to have any nervous disease.

Present History.—Never used alcohol to excess, except on an occasional spree. Gives no history of syphilis ; has had gonorrhœa twice. When about thirteen years old was struck in the back of the head with a brick ; he fell upon the car-track stunned, and remained insensible for some time. Severe inflammation of surrounding parts followed, but he made a good recovery. Does not remember any other injury received, or anything to cause his epileptic attacks, which occurred when he was about nineteen.

While sitting on a bench, working at his trade, he felt suddenly as if he was swelling immensely, all his surroundings seemed to become grossly enlarged, he uttered a sharp cry, and fell in a convulsion, followed by a prolonged comatose condition. His

attacks occurred every week, until finally, under treatment, there were intervals of a month.

Character.—Patient has no premonition ; utters a prolonged cry ; head turns to the right and backwards. Convulsion is limited to right side of face and neck and right arm. Is of short duration. Bites tongue and cheek. Recovers with a start as if surprised. All his attacks have been the same in character.

Condition.—Very well nourished and muscular. Bromide acne over face and shoulders. No peculiarity in shape of head. Pupils widely dilated. Has a dull, stupid appearance. Saliva dribbles from mouth. Emotions easily excited. Cries continuously while in presence of his wife. Is unable to articulate distinctly ; when questioned, mutters unintelligibly ; memory impaired ; married at twenty-four. Has not been excessive in venery. Genital organs normal ; no paralysis ; very feeble from insufficient food during the past few days.

Saturday, 5th.—First day of admission, had twenty-six fits in about twelve hours ; while in the reception office had four ; no treatment.

Sunday, 6th.—Ordered potass. bromid. gr. xv. every hour. As he had slept none during the night, this gave him about one hour's doze during the afternoon. He awoke and had another attack immediately ; bromide continued. Thirty-four fits Sunday night ; slept only for a few minutes at a time.

Monday, 7th.—Fits continued at short intervals. Gave curare gr. one-thirtieth every fifteen minutes, until about one grain was administered hypodermically ; this had no effect. Patient up to this time had eaten nothing, only taking a little milk, and most of that regurgitated. In the afternoon chloroformed him and passed full-sized sounds into bladder. There was no evidence of stricture ; kept under the anæsthetic half an hour ; he slept well for nearly three hours after, awoke again with another fit ; bromide continued, and chloral hyd. gr. xxx. given at night. Total fits, sixty-seven.

Tuesday, 8th.—Was very uneasy during the night ; tossed about the bed ; slightly delirious ; slept at short intervals ; at midnight received chloral hydrat. gr. xxx, sol. morph. (U. S.,) 3 i.

Morning.—Stopped bromide ; heart very slow ; gave tinct. digitalis (Squibb) ʒxii. hypodermically. Ordered infus. digital. ʒ ss. every 3 hours ; heart improved ; breathed freely ; lividity of proboscis disappeared.

Afternoon.—Continued infus. digitalis, gave tinct. ℥xii. again, and ext. ergot fld. (Squibb) 3 ss hypodermically; repeated the latter four times. At six P. M. gave sol. morph. (Magendie) ℥x.; repeated ℥x. at nine P. M.; again at eleven, and added acid hydrocyanic dil. ℥vi. Total number of fits, one hundred and ninety.

Wednesday, 9th.—Went asleep at midnight; dozed about two hours; was restive; refused food.

Morning.—Tried inhalations of amyl nitrite without any effect; during the day gave digitalis, ergot, curare and morphinæ by hypodermic injection.

Afternoon.—Tinct. hyocyamus and tinct. belladonnæ. Cold douche to head; emptied rectum by warm water enema; shaved head and applied ice cap; ice pack at back of neck and over medulla; bathed surface of body with warm water, and sponged after with diluted alcohol; convulsions occurred at intervals of ten or fifteen minutes, with short periods of repose. Total for the day, one hundred and forty. About six P. M. was seen by Dr. Leo, who advised pulv. quiniæ sulph., gr. x., every four hours during the night, with the external applications of cold continued.

Thursday, 10th.—Frequency of fits slightly abated; slept very little; always waking in a convulsion; cried repeatedly; received, at Dr. Leo's request, quiniæ sulphat. gr. iv., chloral hydrat. gr. xv., in solution every four hours. Head carefully examined at seat of injury, where he now complained of pain; some roughening was found, and it was determined best to trephine, as there were concomitant symptoms of compression (most probably from effusion). *At this time patient could not repeat any word distinctly, except monosyllables, and could swallow but very little.* The greater part of food taken into the mouth was regurgitated; bowels moved regularly every day; urine passed, without exception, examined and found normal. Alkaline reaction.

Friday, 11th.—Treatment continued; no perceptible change in number of attacks or condition of patient; up to two o'clock had nineteen fits.

In the presence of Dr. Seaman, Chief of Staff, and several other physicians, I proceeded to operate, Dr. O'Brien having etherized the patient, when I raised a V-shaped flap, removed a disk about one inch in diameter at a point one and one-half inches backward and upward from the right mastoid process, and over the squamous ridge of the temporal bone. There was but a moderate amount of hemorrhage easily controlled; serous exudation external to the dura mater was noticed, and permitted to flow off.

Abundant evidence of an organized inflammatory process, that had doubtless given rise to the chain of symptoms, was observed, and which, if unchecked, unquestionably would have gone from bad to worse. Operation lasted forty minutes; patient shortly recovered from the anæsthetic, and conversed; dressings of carbolized cloths applied; clothes changed and the man fell into a slumber, which lasted nearly four hours; awoke in another convulsion; during the night slept considerably; had seven more attacks; total, eight.

Saturday, 12th.—Early in the morning fell asleep, and remained in a somnolent condition until about eight o'clock. Had a light breakfast of milk and crackers and gruel; treatment of quin. sulph., gr. iv., and chloral, gr. xv., every four hours continued. Temperature 100° , pulse 96; at about 3 o'clock had another convulsion.

Sunday, 13th.—Treatment continued; reapplied dressings; complains of no headache or untoward symptom; bowels moved. Temperature 99° , pulse 96, six P. M. Twitches in face same side as operation. *Had no fits to-day.* Temperature 99° , pulse 90.

Monday, 14th.—Wound healthy; no pus; slight headache described as a fulness over the eyes. *No fits.* Treatment stopped. Temperature $98\frac{1}{2}^{\circ}$, pulse 84. Eats well; bowels regular.

Tuesday, 15th.—Urine high colored; strongly acid. R. Spts. ætheris nitros, $\frac{3}{4}$ i.; sat. sol. sodæ bicarb. $\frac{3}{4}$ iii. M sig., $\frac{3}{4}$ ss in goblet water t. i. d.

Wednesday, 16th.—Much improved regarding urine; bowels regular; no headache; *no fits.*

Thursday, 17th.—Stitches taken out; complete union. Temperature and pulse and *all functions normal.*

Friday, 18th.—Appetite poor; aching in back and general malaise; desires to leave bed; did not sleep well during night. Describes peculiar sensations of rushes of blood, etc., through head; experienced much difficulty in swallowing; has occasional twitches in face, right side; gave some egg-nogg; bowels constipated; moved by soapy enema. Temperature normal.

Saturday, 19th.—Above symptoms increased; is very uneasy. Ordered potass. brom. gr. xv. morn and noon, and gr. xxx, at night with tinct. ferri. chlor. \mathfrak{M} xv. t. i. d.

Sunday, 20th.—Passed the day very comfortably; sat up first time.

Monday, 21st.—Complains of nausea, having eaten some cakes and fruit on Sunday. Ordered bismuth subnit. sodæ bicarb. aa gr. x. given every three hours.

Tuesday, 22d.—Frontal headache; vomited; continued the above every two hours. Seven P. M. vomiting ceased; some pain in stomach; restive; gave him sol. morphinæ (U. S.) 3i. procured relief; slight inflammation at seat of wound.

Wednesday, 23d.—Sat up a few hours. Inflammation increased downward on neck; applied ice cloths. R. Pulvis. opii. 3ii; potass. acetat. ʒ ss.; aquae. Oii, M. Temp. 100°. Pulse 96. Light diarrhœa; renewed the bismuth and soda powder. Seven P. M. diarrhœa abated. Temp. 99; pulse 84. Feels better.

Thursday, 24th.—Inflammation subsided; diarrhœa checked; is eating better. Temp. 100°, pulse 86. Seven P. M. is asleep; has been quite at ease this afternoon; feels dizzy when standing a few minutes; co-ordinates a short distance very well; then forgets himself and reels.

Friday, 25th.—Is very well to-day, except slight diarrhœa. From this time on the patient has made good progress, and for some months has resumed his occupation of cigar making.

Judging by these two cases, it would seem that in subjects who suffer from numerous severe epileptic attacks or convulsions, where there is a direct irritation of the brain, depressed fracture, intra-cranial effusion, or other causative influence producing a compression, the trephin should be used, especially if, after an extended trial of medication, no appreciable benefit is derived.

But to reach a diagnosis, where any one of the conditions referred to exists, is by no means easy, despite the rules and instruction so carefully formulated for our guidance, and which on some future occasion, when I may trespass on your time, I propose to discuss at greater length. Whether it be true that there may be a depressed fragment of bone from fracture, and yet no visible effect produced by it, I am neither prepared to positively affirm or deny, but I should rather opine that any such lesion sooner or later gives rise to trouble. A dilated pupil, with the previous history of a

blow or injury on the head and existing cerebral trouble, should awaken suspicion, and merit a careful examination of the optic nerve, which it, in all probability, implicates, as well as its connecting nerve-centres. A contracted pupil is also full of import. In my first case there were at times entire loss of consciousness, stertorous breathing, excretions evacuated involuntarily, and yet no fracture of the internal table of the skull found, though not misleading, for there was evident compression, which, being relieved, caused an abatement of the trouble.

The second case was not unlike the first in many symptomatic and other essentials, and it would appear a rational deduction that, had the operation not been performed, both of the cases would have terminated fatally. It is this fact which prompts me to urge, what many others have done in a much better manner, that trephining is neither so obsolete or dangerous as claimed, even by such men as Abernethy, Benjamin Bell, Hennen, Guthrie and others. Rather should we consider the words of Mr. Hunter: "As we cannot tell for certain at the time whether the symptoms arise from concussion, compression or from extravasation of blood, it may be more advisable to trepan, *as the operation can do no harm.*"

The subject is one so vast, and involves such important considerations, that I should have hesitated before introducing it, had my own limited successful experience in four cases not given me an opportunity of practically placing on record something substantial in favor of an operation that has fallen into disuse. I cannot permit this opportunity to pass, however, without urging the value of percussion of the head as an aid to our diagnosis in injuries of the skull and abnormal conditions of the brain and membranes. That, with this aid, lesions can be localized to a certain extent, I have very little doubt, and I do not believe the day far distant when that fact will be clearly demonstrated; at present it

serves my purpose to simply invite your criticism and opinion as to the estimated value of the trepan, as gauged by our present experience and practice under similar circumstances.

COMA IN CHRONIC BRIGHT'S DISEASE: THE DIFFERENTIAL DIAGNOSIS OF COMA DUE TO URÆMIA AND TO CEREBRAL HEMORRHAGE.

BY

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Statistics show that cerebral hemorrhage is a very common accident in the course of chronic Bright's disease; also that the hemorrhage is usually of large extent and the accompanying coma very pronounced. It becomes then a very important matter in any case of chronic Bright's disease in a state of coma to determine as quickly and as surely as possible whether this condition of unconsciousness is due to an intracranial hemorrhage or to the so-called uræmic poisoning. The treatment of the case depends entirely upon which of the two conditions is present. In the one case, very active treatment is necessary and the prognosis more favorable; in the other, little interference is justifiable and the prognosis very uncertain. I think that this subject is one of the most important for the physician to appreciate, and I am sure that more than once I have seen fatal results brought about by the improper and injudicious use of remedies, and I have seen this in cases of cerebral hemorrhage as well as in cases of uræmic poisoning. In the two cases which I subjoin the diagnosis was made, and confirmed by *post-mortem* examination.

A. B.—, aged 53. Under my observation for two preceding years, and had presented the evidence of small kidney of chronic

Bright's disease. On the morning of December 11th, 1879, he awoke feeling well, with the exception of a "slight heaviness" about the head. He got up from the bed to go to his bath as usual, when he suddenly staggered and fell to the floor in an unconscious condition. A physician in the vicinity was summoned while I was sent for, who, learning that the patient had chronic Bright's disease, administered muriate of pilocarpine hypodermically. I arrived within half an hour after the beginning of the attack. I found the patient lying on his back, covered with a profuse perspiration, his trachea and bronchial tubes filled with moist rales, so much so as to be audible to all at the bedside; the respirations were of the Cheyne-Stokes nature and stertorous. (During the entire period that he was under my observation, the Cheyne-Stokes respiration was frequently present when sitting quietly or when asleep). His face was pale; the left pupil dilated, and did not respond to light—the right, however, did; the right corner of the mouth drooped, and the right naso-labial line was effaced; saliva, in quantity by reason of the pilocarpine injection, flowed from the right corner of the mouth; his right arm remained passively by his side, but with his right hand he continually fumbled as if endeavoring to get into the pocket of his trousers. The right lower extremity was extended and motionless. Occasionally the left upper and lower extremities would be moved. All of the superficial reflexes were absent on the right side of the body, while on the left side the sole, cremaster, abdominal and epigastric reflexes were marked. The patellar tendon-reflex on the right side was much exaggerated, while on the left side it was normal. The rectal temperature, by a very reliable thermometer, was, at 8.45 A. M., three-quarters of an hour after the beginning of attack, 97° ; pulse, 100; respiration, 34. The urine obtained by a catheter contained some albumen, and had a specific gravity of 1010. No change in his appearance occurred during the 11th. The pulse ranged from 100 to 110; the respirations from 34 to 38. The course of the rectal temperature was as follows: 9.30 A. M., 97° ; 10.30 A. M., 98° ; 11.30 A. M., 98° ; 1 P. M., 99° ; 2 P. M., 99.40° ; 3.30 P. M., 99.60° ; 5 P. M., 100.40° ; 8.45 P. M., 100.60° ; 10 P. M., 100.80° .

December 12.—Passed a quiet night. At 9.20 A. M., pulse 118; respiration, 42; temperature, 101° . 10.45 A. M., pulse 116; respiration, 48; temperature, 103° .

At 11.30 A. M., twitchings of left leg, forearm and face were

observed. Pupils remained about the same, the left slightly dilated and not reacting to light; the right unchanged. At 11.55 A. M., pulse, 110; respiration, 48; temperature, 98.4°. The fall in temperature attracted my attention especially, and the temperature was taken a second time in the rectum with the same result, 98.4°.

12.45 noon, pulse 116; respiration, 50; temperature, 100°.

1.20 P. M., pulse, 116; respiration, 50; temperature, 100.25°.

3.30 P. M., pulse, 126; respiration, 54; temperature, 101°.

Surface temperature of lower extremities taken for the first time, left leg, 90°; right, 91°.

4.50 P. M., pulse, 140; respiration, 44; temperature, 102.6°.

5.10 P. M., pulse, 140 +; respiration, 44; temperature, 103.2°.

5.30 P. M., pulse, 150; respiration, 50; temperature, 103.8°.

6 P. M., pulse, 160 +; respiration, 50; temperature, 105.2°.

6.48 P. M., pulse, 160 +; respiration, 50; temperature, 106.5°.

Death occurred a few minutes after this last observation. It may be of some interest to state that three-quarters of an hour after death the rectal temperature was 105.4°.

Post-mortem examination: Kidneys small, contracted, with irregular surface and adherent capsule, presenting the changes common to the small kidney of chronic diffuse nephritis. Heart hypertrophy of left ventricle. Arteries, extensive endarteritis chronica: the arteries of the brain were especially affected, and particularly those supplying the medulla oblongata. A large hemorrhage was found between the left optic thalamus and lenticular nucleus extending into the left lateral ventricle; a second hemorrhage was observed outside of the lenticular nucleus extending a centimetre beyond the anterior limit of this ganglion,

The reader will please bear in mind the following points in this case: (a.) The absence of superficial reflexes on the paralyzed side with exaggeration of the patellar tendon-reflex, and the preservation of the superficial reflexes and the normal condition of the deep or patellar tendon-reflex on the opposite side. (b.) The fall of temperature taken in rectum and the gradual ascent to 103°, and then the drop to 98.4°, with subsequent rise to 106.5°. (c.) The surface temperature of lower extremities. (d.) The Cheyne-Stokes respiration before the seizure.

B. C.—, aged 41. In the Spring of 1881 it is said a physician stated that he had symptoms of Bright's disease. For nearly a year he complained of intense pain in occipital region and nape of his neck. This pain was most severe in the morning. Morning nausea and vomiting were constant in the latter part of 1881. In July, 1881, had facial paralysis right side, which was apparently of peripheral origin, and disappeared in a few weeks. For the five months previous to his last illness he was unable to get up in the morning before 11 A. M., in consequence of the severe pain in head and neck and the gastric disturbances. Was very ill January 29th and 30th, 1882. Had had very bad headache and had vomited very much during the two days. Was very irritable, "felt afraid of himself," much depressed. Was very easily excited. February 2d went to bed in good spirits. The next morning at five o'clock his wife was awakened by some noise. She found him sitting in a chair with blood and saliva escaping from his mouth. On the floor was a broken urinal. He evidently had arisen to pass urine, and while doing so had a convulsion. He was stupid, though conscious and able to understand what was said to him, but he did not speak, and uttered no words until the following Sunday, two days after the accident.

On February 5th he was seen for the first time by myself. His condition was as follows: Patient lies on his back, and is in a somnolent condition; is aroused when spoken to loudly; has some aphasia; has very decided paralysis of the right face; in sleep the right eye is not entirely closed; his tongue points to the right side; patellar tendon-reflex much exaggerated on right side, moderately present on left side. The superficial reflexes—the sole, gluteal, cremaster abdominal and epigastric—are all absent on the right side, and are all present on the left side of the body. Dynamometer (hand) R. 20, L. 55. Slight difference in the pupils, the right larger. Marked hypertrophy of the left ventricle, no signs of valvular disease. The radial arteries are much thickened; arterial tension is low. Temperature in rectum 102.5° , surface temperature of right foot between great toe and adjoining one, 92° ; of left foot, 90.8° .

Urine has a high specific gravity, 1030; copious deposit of urates, and contains much albumen. Microscopical examination shows urates, uric acid crystals and granular and hyaline casts.

The patient complains of most intense pain in the nape of the neck and occipital region. He localizes very painful spots be-

tween the mastoid processes and occipital protuberance on both sides. This pain is especially severe in the early morning, and he has been found several times boring his head into the mattress in efforts to relieve the pain.

Ophthalmoscopic examination revealed double retinitis albuminurica.

The diagnosis was made of chronic diffuse nephritis, endarteritis chronica and cerebral hemorrhage, with right hemiplegia and aphasia.

The patient steadily improved for some days, and the temperature became normal. Some ataxic aphasia remained. The amount of urine passed was over forty ounces daily, and albumen and casts were always present.

On the morning of February 26th it was observed that the patient was not easily aroused, and was, indeed, in a semi-comatose condition. He had passed his urine in the bed during the night. Pulse, 100; respiration, 32, and temperature, 102.5° at 10:30 A. M. when I made my morning visit. A catheter was passed and about six ounces of urine obtained. This had a specific gravity of 1018; contained a moderate amount of albumen and granular and hyaline casts. The hemiplegic side was apparently more rigid than before.

The condition of the reflexes was the same as in the first examination. There was no conjugate deviation of the eyes, and no rotation of the head. The pupils were the same as before. The respirations were not stertorous; the skin was not dry; the pulse was compressible. There were no evidences of œdema. The odor of the breath was not ammoniacal, and a glass rod moistened with hydrochloric acid and held before the mouth gave rise to no white fumes of chloride of ammonia.¹

Was this condition due to the occurrence of another cerebral hemorrhage on the same side of the brain as the previous one, or was the condition due to uræmic poisoning? Could I have had the rectal temperature of the patient when he was first discovered in this semi-comatose condition, it is probable that a positive diagnosis could have been made as to the nature of this second attack, for I should have found a temperature less than 102.5° , and the diagnosis of cerebral hemorrhage would have been made for reasons to be referred to later. The weight of evidence was

¹ Uræmic Coma. Clinical Essays, p. 153: B. W. Richardson, M. D., London, 1862, Vol. i.

against uræmic poisoning, though I might here mention that the rise of temperature and the moderate rigidity of extremities did not negative this diagnosis, since an elevation of temperature in uræmia¹ is very frequent, if not the rule, and the rigidity of the right extremities could have occurred also in uræmia, unilateral spasm and convulsions not being infrequent. Under the circumstances, I reserved my diagnosis for the time and administered elaterium by the mouth. I selected this drug for the reason that if the patient had uræmia, elimination of the poison by the bowels was better under the circumstances than to use pilocarpine hypodermically and eliminate by the skin and salivary glands, for in several cases of cerebral hemorrhage where I have seen pilocarpine administered under the supposition that the coma present was due to uræmia, the bronchial tubes seemed to fill up very quickly with fluid, as indicated by the numerous loud moist rales heard, and death was evidently hastened in consequence. The elaterium acted some five times, and the passages were large and watery. In the evening his pulse was 120; respiration, 36; temperature, 103°, with no change in his condition, and the stupor had evidently increased.

February 27.—Pulse, 100; respiration, 30; temperature, 102.5°. No change save that he could no longer be aroused. It was very evident now that he had had another cerebral hemorrhage. In the evening, pulse 120; respiration, 36; temperature, 103°.

February 28.—Pulse, 110; respiration, 34; temperature, 103.8° in the morning. No change. Respirations were stertorous and had the Cheyne-Stokes rythm. In the evening, pulse 120; respiration, 48; temperature, 105°.

March 1—Pulse, 140; respiration, 40; temperature, 103°. In the evening, pulse 140; respiration, 48; temperature, 105°. The very rapid increase in frequency of respirations made me suspect that a pneumonia might be developing, but by physical examination no signs of it could be discovered. With the great increase in frequency of respirations the Cheyne-Stokes rythm was no longer appreciable.

March 2—A. M., pulse, 140; respiration, 40; temperature, 103°. P. M., pulse, 140 +; respiration, 48; temperature, 105 +°. Patient died in afternoon of this day.

¹ Temperature in Uræmia, by T. A. McBride, Archives of Medicine, third volume, 1880, p. 65.

Post-mortem examination :

The arteries throughout the body, and especially those supplying the encephalon, presented very decidedly the lesion of *endarteritis chronica*.

The convolutions of the left hemisphere were flattened. The right hemisphere presented no lesion. In the left hemisphere a light chocolate-colored softened spot involved all of the lenticular nucleus, except a small portion of the posterior part, and also the internal capsule between the lenticular nucleus and the corpus striatum, the external capsule and claustrum, and extended a few centimetres beyond the anterior limit of the lenticular nucleus. This was undoubtedly the seat of the first hemorrhage. The left ventricle was filled with fluid blood, with some loose clots ; the left corpus striatum was torn, and contained a clot which extended into the left ventricle. In the right ventricle there was present some pinkish serum.

The left ventricle of the heart was considerably hypertrophied.

The kidneys were somewhat diminished in size, and presented the lesions of chronic diffuse nephritis.

The differential diagnosis of coma in patients with chronic Bright's disease, whether dependent upon uræmia or cerebral hemorrhage, can, I think, usually be made, and most of the means by which such a diagnosis can be made were present in the cases I have narrated. I shall now consider them in detail.

1st. The temperature.—It is necessary to have an excellent and tried self-registering thermometer, and the temperature should always be taken in the rectum. In chronic Bright's disease and in the aged the temperature taken in the axilla is often a degree or more lower than the rectal temperature. Charcot, in a communication to the Société de Biologie,¹ called attention to the fact that in cerebral hemorrhage at its beginning there was a fall of central temperature of the body below (37.5°), 99°. This might be present from an hour or two to ten hours or more, and until death in the so-called

¹ Comptes Rendus des Séances et Mémoires de la Société de Biologie ; tome iv. de la 4e série, page 92, le 15 Juin, 1867.

fulminating form. The longer the temperature remained low, the more unfavorable was the prognosis. He also called attention to a subsequent rise of temperature. Bourneville¹ has studied the subsequent changes of temperature with great care. The period of depression may be followed by a continued and uninterrupted rise of temperature to 105° to 108° F.; this may occur in 24 hours or a few days, and death occurs. Or, following the initial depression may come the so-called stationary period, the thermometer oscillating between 99° and 100.5° F. for two to four days, and returning to normal, when the patient convalesces. After the stationary period may appear in other fatal cases the ascending period, when the temperature rises to 105°, 108° F. or more.

In the case of A. B. the rectal temperature a little more than half an hour after the beginning of the seizure was 97° F., and remained so for nearly two hours. The rise of temperature then began, and continued slowly and uninterruptedly for twenty-four hours, when the temperature 103° F. was noted. At the next observation, one hour and twenty-five minutes later, the temperature, twice taken to be certain, was 98.4° F., a fall of more than four and a-half degrees. Just before this observation was made, repeated twitchings or spasmodic movements were observed to take place in the left face and left upper and lower extremities. It is almost certain that the second hemorrhage occurred at this time, and very probably it was the one which broke into the left lateral ventricle, since spasmodic movements are frequently met with when ventricular hemorrhage occurs and may affect both sides. Immediately after, the temperature began to rise and mounted steadily up to 106.5° F., when death occurred. The typical course of the temperature curve in this case was di-

¹ *Etudes Cliniques et Thermométriques sur les Maladies du Système Nerveux* par Bourneville, Premier Fascicule. Hémorrhage et Ramolissement du Cerveau. Paris, 1872.

agnostic of cerebral hemorrhage. In the second case the temperature afforded but little assistance. The steady rise of temperature after the second attack should be regarded of some value, however, in arriving at the diagnosis of cerebral hemorrhage, since in uræmia, coma or convulsions the temperature has no characteristic course. In most of the cases which we see in this country of uræmic coma or convulsions, a high rectal temperature is observed, and this is directly opposed to the observations of Bourneville.¹ In all of the cases which I have been able to find the temperature recorded, or in which I have made personal observations, the temperature has been elevated, and has been usually from the first very high, 103° F.—104° F. I am disposed to think that a high temperature occurring shortly after the advent of coma should have some weight in ascribing the cause of the coma to uræmia.

2d.—The presence of evidence of interference with certain functions of the brain from some gross lesion, *i.e.*, cerebral hemorrhage producing a hemiplegia. I call attention to the presence of hemiplegia in cerebral hemorrhage because it is so commonly present in a hemorrhage of any extent, and in chronic Bright's disease the hemorrhages are, as a rule, large. (Wilks and Mixon and Bamberger.) It is, however, not always an easy matter to recognize a hemiplegia when the patient is comatose. I believe it is as frequently overlooked as recognized. The following signs are those which indicate the presence of a hemiplegia due to a lesion of one of the hemispheres.²

(a) "Conjugate deviation of the eyes and rotation of the head away from the paralyzed side and towards the hemi-

¹ De la température dans l'urémie. Paris, 1872; p. 171.

² In this article I shall not attempt to present the signs occurring when a hemorrhage occupies some other part of the encephalon than the cerebral hemispheres. The two cases reported furnish the text to which I must closely keep, in order that the length of this paper be not too great.

"sphere which is the seat of disease, usually occurs as a temporary symptom in all cases of cerebral hemorrhage
 " * * * 1"

It should be borne in mind that in unilateral spasm or convulsions the deviation of the eyes and rotation of head will be turned to the convulsed side—away from the hemisphere the seat of the lesion. In both instances the phenomenon is of short duration, and often is temporarily absent in sleep. It more frequently accompanies the hemiplegia of cerebral hemorrhage than hemiplegia due to other causes.

(b) The presence of facial paralysis (cerebral). If the patient be full-bearded and unable to protrude his tongue, as is to be expected, unless the coma be not great or is passing off, this is not always easily made out.

(c) The limp condition of the upper and lower extremities. When an arm or leg is held up from the bed, it falls as a dead weight. This is a most uncertain sign, and one not to be depended upon.

(d) Exaggeration of the deep or tendon-reflexes on the hemiplegic side. I believe that in lesions of any extent of the cerebral hemispheres the exaggeration of the patellar tendon-reflex or "kick out," and of the triceps elbow reflex on the paralyzed side can be easily made out. This exaggeration is easily appreciated by comparing the tendon-reflexes of the opposite side to those of the hemiplegic. In the few cases in which I have tried it, the zyomatic tendon-reflex has been exaggerated on the side of the facial paresis, but I mention it reservedly, for I have not had opportunities for any very extended trial.²

¹ A Treatise on the Diseases of the Nervous System. By James Ross, M. D., London, 1881, p. 533.

² I have under observation several cases in which the diagnosis of lesion of the pons Varolii has been made, and in which, with no signs of spinal trouble, the patellar tendon-reflex is absent. I refer to it here that the attention of others may be directed to it, if it has not already been observed.

(*e*) Abolition of the superficial reflexes on the hemiplegic side and their existence on the non-paralyzed side. The sole, cremaster, gluteal, abdominal and epigastric reflexes were absent on the hemiplegic side in the cases I have reported and present on the opposite side. In seven cases of recent hemiplegia—within the first month—the paralysis being due to embolism, thrombosis and cerebral hemorrhage unassociated with chronic Bright's disease, I have obtained the same result. The reflexes were excited by "tickling" the skin with the finger or a pen in most of the cases. In some they were produced by the wire brush with a very feeble Faradic current. The most constant of the superficial reflexes in my experience have been the sole, gluteal, abdominal and epigastric; the cremaster reflex the most uncertain. I am inclined to think that the superficial reflexes are not in most cases carefully enough tested, and I believe that their presence or absence is of the greatest aid in the diagnosis of hemiplegia in those unconscious.

(*f*) Increased temperature of the extremities of the hemiplegic side, the elevation of temperature amounting to a degree F. and occasionally to two degrees.

(*g*) Erythema of the centre of the gluteal region. This with coma, the central temperature referred to, and an increase in the surface temperature of the extremities on the side opposite the seat of the hemorrhage, with the reflexes, furnishes the group of signs for a diagnosis of a hemorrhage into a cerebral hemisphere without paralysis. Charcot¹ states that the erythema when present usually shows itself from the second to the fourth day after the seizure, rarely sooner and sometimes later. Very quickly an eschar forms in the site of the erythema.

¹ *Leçons sur les Maladies du Système Nerveux* par J. M. Charcot, Paris. 1872-1873, p. 82.

(h) The symptoms and signs of uræmia. The presence or absence of this must be determined before a clear differential diagnosis can be made, and it is very likely that cases occur in which uræmia co-exists with cerebral hemorrhage. The symptoms are: The history of *malaise* preceding the coma, nausea, headache, vertigo, dyspnœa, amblyopia, stupor or insomnia, great restlessness, palpitations, perhaps anasarca, diminution in amount of urine, increase of albumen, pain in back.

The signs likely to be found in one with pure uræmic coma are:

In most cases a high temperature.—The exceptions are probably as follows:

1. In cases of renal disease secondary to diseases of the urinary tract, especially when accompanied with suppression of urine.
2. In the aged.
3. In the course of chronic renal disease in which there may have been vomiting, diarrhœa and hemorrhages.
4. In the cancerous cachexia, and in marasmic conditions.

The high temperature is thought by some to occur only when œdema of the brain is present (Janeway). When high temperature is present it is 103° F. and over, and has no characteristic coma, but it is present early in the attack and continues.

Suppression of urine or scanty and bloody urine, accentuation of second aortic sound of the heart, and a pulse of high tension.—These signs are appreciable only early in attack, since with the elevation of temperature, when above 102.5° F., the high tension disappears, and the accentuation of second aortic sound likewise.

The temperature of the patient may almost be determined by the sphygmographic trace, since a trace of full dicro-

tism is met with as a rule when the temperature rises much above 102° F.

Œdema of the lungs; marked subconjunctival œdema in connection with other signs: hydrothorax; general anasarca.

By a careful consideration of the above conditions I believe that the differential diagnosis can almost always be made, although one must be prepared sometimes to find uræmia and cerebral hemorrhage co-existing.

The cases reported present some interesting points, to which I shall briefly refer.

In the case of A. B. ———, the Cheyne-Stokes respiration had existed two years before death. The explanation was found in the very atheromatous condition of the arteries supplying the medulla.

In the case of C. D. ———, the facial paralysis is much more marked than is usually the case in lesions of a cerebral hemisphere. The orbicularis palpebrarum and occipitofrontalis of the right side of the face were involved. The patient was unable to close his right eye, and the right side of his forehead was smooth and free from wrinkles in contrast to that of the left. The seat of the hemorrhage explains the completeness of the facial paresis. The anterior portion of the internal capsule and all but the posterior portion of the lenticular nucleus were destroyed.

In the same case a very prominent symptom was the severe pain complained of in the occipital region. This I have observed in several cases of chronic Bright's disease. The pain was always very severe. Dr. Bright, in Guy's Hospital Reports, No. 1, January, 1836, p. 12, explains the production of the pain by the pressure of the thickened vertebral arteries upon the upper cervical nerves. He says: * * "if we turn our attention to the position of the sub-occipital and two superior cervical nerves, relatively to the vertebral artery, we shall perceive that the sub-occipital nerve lies

“ side by side with the artery, where the latter makes its turn
“ in the groove of the upper edge of the atlas; and that the
“ second cervical nerve, on issuing from the spinal canal,
“ passes close to the artery; whilst the anterior division
“ of the first cervical nerve passes directly across the artery
“ on its way to join the cervical plexus. When these cir-
“ cumstances are borne in mind, we shall find no difficulty in
“ admitting the high probability, that if the artery be dis-
“ eased, it may directly excite pain and irritation in parts
“ to which the sub-occipital and second cervical nerves are
“ distributed, and similarly affect those supplied by the
“ great occipital (which is the posterior division of the first
“ cervical nerve), *by means of a reflex action* * * * ”
He adduces in support of this theory four cases with *post-*
mortem examination of one.

ALCOHOLIC ANÆSTHESIA.¹

BY

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We recognize two forms of alcoholic anæsthesia :—

First. A condition of anæsthesia following the administration of a certain quantity of alcohol. The state of the person borders upon and may lapse finally into alcoholic coma, although it is not necessary that the patient should be profoundly under alcoholic influence to manifest an anæsthetic condition. This form of anæsthesia is general in character, and seems to affect not only the integumentary but the deeper tissues of the bodies as well. It is transitory in its effects and passes off as the alcohol is eliminated from the system, the patient recovering his normal sensory condition when this occurs.

Second. A condition of anæsthesia due to the long continued action of alcohol on the nervous centres. This form is partial in character, affecting a limited space; it is, however, of comparatively long duration, lasting some weeks or months, the patient slowly recovering his normal sensibility after a period of abstinence and the use of proper therapeutic measures. A relapse is apt to occur should alcohol again be resumed. This latter or pathological condition was recently exemplified in a case which occurred at the Inebriates'

¹ Read before the American Association for the Cure of Inebriates, May 3, 1882.

Home, Fort Hamilton. The main features of this case were as follows :

L.—, aged 46, very obese and large, weighing 380 pounds, entered the institution after a debauch. Although somewhat apathetic, he was apprehensive about the condition of his legs ; he walked with difficulty from the bed to the lounge, although when sitting or lying he had good command of his limbs as to motion. His inability to walk seemed to be mainly due to his great weight and general debility. His pulse was feeble, his circulation sluggish, notably capillary circulation of extremities and face, the latter being somewhat dusky. He complained chiefly of a numbness of both legs at and below the knee, extending up the inner side of thighs ; the most marked places of anæsthesia being patches on the right and left legs over the internal subcutaneous surface of the upper third of the tibia, between crest and mesial line of calf of legs. The anæsthetic condition was bi-lateral and localized to a distinct space, being patchy in character and not following any special linear course. Dr. Seguin, of New York, saw the case in consultation with the resident medical staff of the institution and myself, and recommended in addition to the withdrawal of alcohol, as soon as the patient's strength would allow it, the use of oxide of zinc in free doses, and locally, the electric brush twice daily. The patient, after a few weeks of treatment, recovered the use of the parts affected, so that at the last examination the slightest touch of the finger at the formerly anæsthetic parts was readily noticed by him.

Dr. Seguin related a case of alcoholic anæsthesia where the forearms of the patient were anæsthetic to a marked degree, needles being passed into the tissues a considerable distance without being felt by the patient. In the case under consideration the patient was insensible to the prick of an ordinary needle, although blood was drawn at the seat of puncture. The sensory nerves responded, however, to a needle through which a powerful current of electricity was passed. I am inclined to believe that though this is regarded as a somewhat rare neurotic condition, we would find it more frequently if we searched for it among our asylum cases, as it is a condition that, in its slightest forms, might readily be overlooked.

But it is to the temporary form of alcoholic anæsthesia that I wish particularly to call your attention, especially the use of alcohol as a substitute for the usual anæsthetics in painful and prolonged operations, where, for some reason, these would be contra-indicated.

Experiments upon animals, by Anstie, Magnan and others, have demonstrated the anæsthetic property of alcohol.

In an article on Alcohol-narcosis, Anstie gives the results of a series of experiments on dogs, which illustrate the point in question. One of these experiments is as follows :

"A dog, full-grown and healthy, weighing 10 lbs. 4 oz., had 6 oz. of a mixture consisting of equal parts of rectified spirits of wine (P. L.) and water introduced into his stomach by an œsophageal tube, at 1 P. M.

"No food had been taken for four hours previously.

"1.04 P. M.—The animal is obviously affected; he staggers in walking, looks puzzled, and frequently falls down.

"On examining him carefully it is seen that the hind-quarters are very weak, and, moreover, the skin of the hind limbs is partially insensitve. Respiration 24, circulation 140.

"1.06 P. M.—The dog lies on the floor very drowsy, but capable of being aroused; the hind limbs are completely paralyzed, the fore limbs retain a slight degree of voluntary power. The conjunctiva is fully sensitive still, but the *skin about the mouth and face seems to be entirely paralyzed as to sensation*. The tongue is protruded, and the dog slavers somewhat.

"1.07. P. M.—The animal falls on its side, comatose and snoring.

"*The conjunctiva is now equally insensitive with other parts*. Respiration 20, circulation 184, tolerably strong.

"While the animal remained in this condition it was determined to examine whether any part of the body retained sensibility. It was found that the whole ano-genital region was still so far sensitive that a slight whine of pain was elicited by pinching with forceps any part of it. The pupil, during the first ten minutes after the effects of the alcohol became apparent, was strongly contracted; at the end of this time it began to dilate, and at 1.25 it was seen to be perfectly dilated, and very little sen-

sitive to light. Respiration had now risen again in frequency (to 30); heart's action 200, and somewhat irregular.

"1.32 P. M.—Dog made a slight struggle, and vomited half an ounce of mucus containing alcohol; after this a return to partial consciousness, but anæsthesia of surface remained complete, and even conjunctiva perfectly insensitive.

"From this moment nothing worthy of note occurred, except the hind limbs were affected with a continuous tremor for a short time. Respiration declined in frequency, became gasping, and finally ceased, the animal dying at 3.05, or two hours and five minutes from the administration of the alcohol. The heart was then beating 64 per minute, and continued to act slightly for a few minutes. It remained irritable some moments later."

To illustrate the anæsthetic value of alcohol we have only to go back to the old days of surgery when ether and chloroform were unknown, when the usual custom was to prepare the patient for a painful and protracted operation by partially intoxicating him with alcohol, in order to reduce the amount of physical suffering to a minimum.

Dr. B. W. Richardson gives the following recent and authoritative expression of professional opinion on this point:

"The alcohols are strictly anæsthetics, and, indeed, the first published case of surgical operation under anæsthetic sleep was performed in 1839, by Dr. Collier, on a negro, who was rendered insensible by breathing the fumes of alcohol."

In the *Boston Medical and Surgical Journal* of June 18, 1845, is to be found an article entitled, "Dr. Ellsworth on the Modus Operandi of Medicine." It is by P. W. Ellsworth, M. D., of Hartford, and includes the following paragraph:

"Illustrative of the effect of spirit in preventing pain is the following case: Having occasion to remove nearly all of the upper lip for a cancerous disease from an intemperate man, I found him well prepared for the occasion, having fortified himself with an extra glass or two. No marble could have been more passive during the incisions; not a muscle moved, nor did a sigh escape him, *yet he was not intoxicated*, but his nervous system was too much excited (?) to feel as keenly as when in perfect sobriety."

Dr. Stephen Smith, of New York, in an article published

in the New York *Medical Record* some time since, advises the use of alcohol in some form to precede that of the usual anæsthetics, especially when the operation is to be a prolonged one, and when the patient is feeble and in more than ordinary dread of the operation. His method is, I believe, to begin the use of alcohol an hour or two or longer before the operation, and by gradually repeating the dose at proper intervals bring the patient up to a comfortable state of stimulation, but so as to neither over-stimulate or produce alcoholic coma. When this state of a sense of well-being and a lack of dread of the operation is arrived at, etherization may be commenced and the operation eventually begun. Dr. Smith finds that the patient requires less ether and its prolonged use is better borne. That there is much less surgical shock, if any, and that the patient rallies better after the operation. Dr. Smith, then, uses alcohol not as a substitute for, but as an adjunct to the usual anæsthetics.

In certain forms of neuralgia the value of a few glasses of wine or a tumbler of brandy and water has been recognized by the medical authorities. In the case of invalids, when the extraction of teeth was necessary, and when, for good reasons, the usual anæsthetics were not regarded as safe, it has been my custom to advise the use of alcohol as a substitute with the desired effect.

An experience as hospital surgeon, extending over a number of years, has directed my attention to the fact that patients, when brought to the hospital under the influence of alcohol, could be operated upon, especially if the case was one of minor surgery, with little if any suffering.

I have not been able to note the effect of alcohol as an anæsthetic in cases where the operation was somewhat protracted, as well as more than ordinarily painful, until recently. Such a case has been placed at my disposal by Dr. W. H. Bates, of Brooklyn.

The case was one of a lady suffering from a recurrent carcinoma of left mamma in the ulceration stage.

The patient, having suffered from a previous etherization, was unwilling to undergo the experience again, and it was decided to try the anæsthetic effect of alcohol. The administration was begun about two hours previous to the operation. The quantity used was six ounces of old brandy properly diluted, given about every twenty minutes in divided doses. When placed on the operating table she was fully conscious of all that transpired. The superficial portions of the breast being removed by scissors, and the deeper portions by means of the electro-cautery knife, the deeper and surrounding tissues being deeply cauterized, the patient was wholly unconscious of pain during the operation and under perfect control and self-possessed, answering questions that were asked her. The operation lasted about one hour and a half. Towards the latter part of the operation the effects of the alcohol became more manifest, and she passed into a sleep which lasted some four or five hours, and awoke feeling refreshed and stronger than for some days previous. Her pulse was good during the entire operation, and neither during nor following it did she have any unpleasant symptoms. The following case occurred in the doctor's experience, and bears directly on the point under consideration: An intoxicated passenger, while endeavoring to pass from one car to another while the train was in motion, fell from the platform to the track, the cars passing directly over both legs. He was taken to the next station, and while in a condition of alcoholic stupor both legs were amputated without the administration of ether. When he recovered his sobriety he had no knowledge of the accident, nor of the operation, and was surprised to find his limbs amputated. He recovered from his double amputation.

Dr. Blanchard, Medical Superintendent of the Inebriates'

Home, Fort Hamilton, reports the following case: A healthy, robust man fell, while intoxicated, under a passing train, the wheels going over his arm. He was conveyed to a house near by, and shortly after amputation at the shoulder joint was performed, while he was still under the influence of alcohol; when he recovered his sobriety he was not aware that his arm had been amputated, nor did he during the operation manifest any marked degree of sensibility. He recovered rapidly. There was union by first intention. There was not any shock during nor following the operation. The amputation was on Thursday; on Monday he walked to the station and took the cars for New York. I need hardly add that certain precautions are necessary should we decide to use alcohol. We should avoid an overdose, as dangerous toxic symptoms may supervene, especially in young persons who are extremely susceptible, if temperate, to its lethal effects. In females, also, from a moral point of view, we should, if decided to use it, protect ourselves with proper witnesses. Nor should we give it, for obvious reasons, to persons who have been addicted to its use, or indeed to any person in whom there may be a latent predisposition to either insanity or inebriety. Tuke, Magnan, Bucknill, all relate cases where the insanity evidently followed the first excess in alcohol.

While, then, alcohol has undoubtedly the property of producing general anæsthesia, a temporary condition, or partial anæsthesia, a pathological and somewhat protracted condition is of interest to us as general practitioners. But as specialists this fact becomes to us doubly significant, as it enables us to determine the exciting cause of inebriety in a certain class of cases. A case entered the Fort Hamilton Institution some years since, which, at the time, impressed me very much. The patient was a young man affected with tertiary syphilis, manifesting itself in a severe form of neuralgia of the face and neck. This had yielded partially to the

usual treatment, but not so as to give the patient any permanent or satisfactory relief; he assured me he drank for the relief it gave him, and he was only free from pain when he was "comfortably full," to use his expression, and that his pain made him drink. He further stated that he had tried opium and that he did not like its effects.

Now this is the condition of many inebriates; they have some painful disorder which they find is relieved by alcohol. Dysmenorrhœa is a familiar form of a diseased condition relieved by alcohol, and many women become inebriates from this cause. "A common domestic remedy," writes Grailly Hewitt, the English gynecologist, "one the frequent use of which it is not, however, for obvious reasons, desirable to encourage—is gin and water." It is our duty then, when patients apply to us or are sent to our asylums, to investigate the exciting cause of their inebriety. If it is some painful disorder and the patient tells us that he uses alcohol to relieve his pain, our course is at once apparent, to cure his disease or find some substitute for the alcohol. If we cannot remove the cause or find some efficient substitute for the alcohol, the patient passes to the incurable class of inebriates, a class that needs medical care as much as the incurable insane, requiring the treatment and restraint which only an asylum can give, for their constant or irregular resort to stimulants places them among the irresponsible classes of society. So whether curable or incurable, these persons who demand our heartiest sympathy will certainly present themselves. How we shall be enabled to recognize the possible exciting cause of their inebriety, and perhaps forecast their future, is the object of this paper to point out.

ATTACKS ON ASYLUM OFFICIALS—THEIR FORENSIC BEARING.

BY

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There has been exhibited of late a tendency to regard the seeming existence and sufficiency of an alleged motive for a crime as proof positive that the crime was not the offspring of insanity. The average "expert" has had two contrasted pictures framed in his mind, sanity and insanity, and any evidence of the existence of the former in a criminal act has usually been held all-sufficient to exclude the latter. The problem of feigned or alleged insanity is not approached from a scientific standpoint alone, but with minds full of *a priori* dicta and modified by prejudice. If desirous of ascertaining the truth the question should be asked, whether the existence of a sane motive for a criminal act proved that the act was the offspring of that motive, and the criminal, therefore, a sane man? It must be recollected that in dealing with insanity, we approach something in which *bizarre* reasoning is constantly exhibited. To deal with the motives of sane men for crimes is often a nice question of psychological analysis. Men have committed murders for which they have assigned definite motives, simply as a means of committing suicide. Cases are known in which arson has been committed, not for gain or revenge, but to call attention to the incendiary's ability as an officer, or his zeal and self-sacrifice as an employee, displayed in saving goods from his employer's premises, which have just been fired by him. Since such

complex motives determine the crimes of the sane, it must be obvious that in entering the domain of the morbid the problem of motive becomes still more involved. As an attempt at the elucidation of this problem, I have collected some cases of assaults on officers of asylums by lunatics previously adjudged insane and confined as such. These cases will, I believe, demonstrate four propositions :

First—Criminal acts committed by the insane often originate in sane motives.

Second—Acts committed by lunatics from a purely insane reason are sometimes referred to a sane motive.

Third—Acts committed by lunatics may be the distant outcome of an insane delusion, yet the act be the result of a strictly logical and sane motive.

Fourth—That the execution of decidedly insane projects may be interfered with by a healthy conception.

In corroboration of the first proposition may be cited the language of Dr. R. S. Dewey,¹ who says: "There are lunatics who know perfectly well the nature of their crime, who are able to distinguish the moral quality of an act, and who are actuated by a criminal motive. There are asylum patients who know right well that they would enjoy immunity for any crime they might commit, because they had been pronounced insane, who only lacked the opportunity to perpetrate any deed." A very well marked illustration of the truth of the first proposition is to be found in the attack on a superintendent of the Williamsburgh (Va.) Asylum. He was a rough, gruff man, very dictatorial in manner. A recently admitted chronic case, a Virginian planter of good family, asked him courteously a question. The reply was: "Don't bother me with your nonsense." The question was repeated and answered with a taunt, whereupon the patient

¹*American Journal of Insanity*, July, 1882.

raised a chair and struck the superintendent, inflicting a wound which resulted in the latter's death. This was, it will be obvious, nothing more than might have been done by a hot-tempered gentleman under the same circumstances. An attack was made upon the Superintendent of the New York City Asylum for the Insane under much the same circumstances. Had these two cases occurred in the public street, and had the history of the patients been unknown, experts examining them would have judged of their sanity by the fact that the crime had a motive, and that the conduct of the criminal was identical with that of the majority of persons under the same circumstances.

No better evidence of the truth of the second proposition could be offered than the following two cases, one coming partly under my own observation, and the other reported by Sankey.¹ An Irish patient, who bore the Mongolian features of the Ferbolgs, the Turanian pre-Aryan inhabitants of Ireland, had made an attack on Dr. Parsons, then Superintendent of the New York City Lunatic Asylum. To myself and another physician, who had charge of him some years subsequent to the attack, he said that Dr. Parsons had refused to discharge him, and had treated him haughtily for asking his discharge. The real motive of the attack was to be found in the delusion that Dr. Parsons violated his sister every night. That the influence of the first motive was but slight, if at all existent, is shown by the fact that Dr. Parsons' successor treated him very insultingly in refusing his discharge, but on no occasion did the patient make an attempt at injuring him.

The case cited by Sankey is reported by Dr. Lockhart Robertson. The patient cut an attendant's head with a knife. He took advantage of the attendant being alone and

¹Lectures on Mental Disease.

carrying a tray full of utensils. He attempted to gouge out the eyes of Drs. Huxley and Hills with a sharpened piece of wood. The patient had delusions about being a prophet, and also hallucinations. After these attacks he conducted himself so correctly that his discharge was thought of, and in consequence the case was referred to the Commissioners of Lunacy about six months after the last assault. Twelve days subsequent to this he had a slight attack of malaise, for which he was treated in the Assistant Medical Superintendent's room, where there were surgical instruments lying around. The next day he made an attack on the Assistant Superintendent with a pointed piece of wood. He said this attack was instigated by an objection he always had to the medical officers, and that he would not injure the attendants, —that he knew what he did. In this case and the one first cited the alleged motive was the one on which a criminal prosecution would be based, and had the cases occurred elsewhere than in the asylum, medical men would have pronounced and juries would have adjudged the prisoners sane.

In proof of my third proposition the following cases may be cited. The first is the murder of Dr. Adams. Dr. Geo. C. Palmer, Superintendent of the asylum, has kindly communicated to me the following data concerning this sad case. The insanity of the patient committing the homicide resulted from sunstroke, and was characterized by maniacal symptoms at first. After the excitement passed off, he was much demented, and on two occasions remained for some weeks in a stuporose condition, requiring, during part of the time, artificial feeding. At the time of the homicide mental enfeeblement and irritability were the most marked symptoms, although he had the delusion that he had changed his sex. Dr. Adams had detained several of his letters to a sister, considering them, from their obscenity, unsuitable to send, and tried to persuade him to write in a different style.

The day before the homicide the patient had handed the attendant a letter, which the latter forgot to deliver that day. When Dr. Adams made his visit the next morning, the attendant handed him the letter, and he was met immediately after by the patient, who inquired if he had mailed it, and, upon his replying in the negative, immediately stabbed him with a large pocket knife which he held concealed, with the blades open, in his sleeve. According to his subsequent statements, he had had the knife in his possession about ten days, and had decided to kill Dr. Adams the night before. He has never expressed any regret, but has made threats of serving the other physicians in the same way if his letters were not mailed, and has assaulted his attendants when freed from restraint.

It will be obvious that the motive in this case was not purely insane. The murder was directly occasioned by the non-delivery of the letters, which, to a person suffering from the irritability produced by sunstroke, would be a source of ideas of persecution. No doubt, had the letter been sent the homicide would not have been committed. That the act had a partly insane origin cannot be denied, yet the reasoning was closely akin to that exhibited by an irritable but sane man under the same circumstances, except that it displayed more evidence of "premeditation." The attack on Dr. Orange,¹ although originating in an insane delusion, was the direct result of a process of reasoning. The patient several years previous fired a pistol at the Master of the Rolls, for the purpose of obtaining justice, and as this did not succeed, he made up his mind a year previous to the attack on Dr. Orange, "that nothing less than an act of murder would be sufficient to call public attention to, and deliver him from the conspiracy of which he was the victim." He made a request of Dr. Orange respecting a letter which

¹ Journal of Mental Science, July, 1882.

he wished to write to a brother residing abroad, and while Dr. Orange was looking over some papers the patient gave him to read, he dealt him a heavy blow on the crown of the head with a stone sling in a handkerchief. In this case there was premeditation. The crime resulted from a sane process of reasoning, if the premises given be accepted. Neither revenge nor anger against Dr. Orange mingled in the attack. Dr. Becoulet,¹ of the Asylum of Dôle, France, was attacked by a lunatic under much the same circumstances as Dr. Orange, the patient having delusions of persecution. A Kentucky physician was nearly killed by a patient for not allowing him to be discharged. Dr. D. R. Brower was assaulted for evading a direct answer to the question whether he would send certain letters.

In dealing with an alleged lunatic the question of motive alone will therefore not be sufficient to settle his sanity. An analysis of all the circumstances of the case is an absolute necessity. The opinion of Dr. Hammond,² that the commission of a crime apparently disconnected with a delusion should not be condoned by the insanity of the criminal may be in accordance with legal ideas, but it certainly is not justified by general observations of the kind just narrated, for these have shown that in some cases a chain of reasoning connects a criminal act and a delusion totally dis severed in appearance.

The problem of ascertaining whether an alleged criminal is insane or sane should be solved, not in the light of the result to society, nor in the view of whether certain *dilletante* alienists of the medical and daily press are to be placated, nor whether certain sentimentalists are to be pleased by having a pet murderess set free, but from the same standpoint that all other problems in science are solved. The question

¹ Annales Medico-Psychologiques, vol. viii., série vi.

² International Review, November, 1881.

should first be asked by the alienist of himself, is the prisoner insane? Second, is the nature of the crime consistent with the type of insanity presented by him? The pertinency of these two questions can be well illustrated by supposing a case of pre, or inter-vallary, post-epileptic insanity, or epileptic equivalent, or circular insanity (cyclothymia of Kahlbaum, folie circulaire of the French), to have committed a cold-blooded, deliberate murder during the sane period of the psychosis. Here there would be no doubt that the prisoner was at times insane, but the history of the crime and its motive might be inconsistent with his type of insanity, and his responsibility therefore be undeniable. On the other hand, if the patient was a primary monomaniac, or one of the chronic types of insanity, he might commit such a murder, but to hold him responsible and execute him would be to commit a judicial murder. To determine the alleged type of the criminal's insanity is the first step in the problem, not to determine his motive for a crime. This first element determined, it determines the value of the alleged motive as an element of diagnosis. Dr. C. F. Folsom¹ has alluded to Guiteau's crime as being possibly allied to the murder of a hated insane asylum superintendent by one of his patients. To this opinion I must demur. That there was a personal motive of the kind is seemingly shown in the remark of Guiteau that if he had received the Paris Consulate at a certain time, the crime would not have been committed. In measuring the influence of this apparent motive, it should be recollected that Guiteau regarded himself as one of the great men of the party, if not the greatest. A slight to him was therefore, in his opinion, but additional evidence that the war on the "stalwarts" was not a war on individual "stalwarts," but a war on that faction as a whole. In Guiteau's mind an extended war on that

¹American Law Review, February, 1882.

faction meant civil war. This was, therefore, only a very minor link in the chain of circumstances leading Guiteau to regard his imperative conception for the removal of Garfield as an inspiration of the Deity. The idea of *revenge* did not enter into the motive, as is the case with the motive of the lunatic murdering a hated superintendent.

In conclusion, I cite one case which has already been frequently cited for other reasons, but which is the strongest evidence of the fourth proposition. The case is reported by Dr. Yellowlees.¹ "Smith, a joiner, became a printer in order to publish his own documents. For seven years he had been a laborious teacher and a precentor in a church. The first ascertainable symptoms of insanity were great sensitiveness, which evolved into a delusion of persecution. He summoned before a magistrate a man who called him 'Whisker Willie.' The complaint was dismissed, whereupon Smith assailed the magistrate for his unjust judgment. He was sent to prison in consequence, and was regarded there as insane, and sent to an asylum, where he secreted a dagger, with the idea of revenging himself. He was transferred to another asylum, and discharged therefrom after a short residence. He became a publisher, and issued numerous insane documents. He was annoyed as before by being called nicknames, some of which were evidently hallucinatory. In consequence of these nicknames he was constantly summoning people to the Police Court, who were as frequently discharged. He became a joiner a few years later, and in consequence of his continued annoyance and failure to obtain justice, he entertained the idea that he must take the law into his own hands, and collected weapons. He openly avowed that if he could just get bloodshed he would be satisfied, but that he must kill somebody. He fortified his house against his enemies and the police. In one of his

¹ Edinburgh Medical Journal, 1882.

publications he threatened that an attempt to take him would result in his entry swimming in blood. He was thereupon regarded as a dangerous lunatic; *nine* years after his discharge from the asylum he murderously assaulted the medical attendant of the work-house to which he was committed. He was brought therefrom to the Morningside Asylum in irons. The man who brought him was so terrified that he ran off with the key of the irons. Smith was under the care of Drs. Skae and Mackinnon for twenty years, and frequently attempted to murder them under circumstances evincing cunning and premeditation. He once stabbed Dr. Mackinnon and his assistant with an iron rod. He had much difficulty, he said, in restraining himself from rising in the asylum chapel, when acting as precentor, and braining Dr. Mackinnon with a chair. For months he occupied himself in fabricating, from cutting of leads, a slung-shot, with which he struck his attendant on the head. He spent much time latterly in writing details of extravagant inventions, including his discovery of perpetual motion. He made another attempt to kill an attendant under circumstances which led Dr. Yellowlees to say: "It is scarcely possible to find words to describe his devilish ingenuity, deliberativeness and determination, and his fiendish delight in his murderous attacks." In 1858, eighteen years after his commitment as a dangerous lunatic, he told his attendants that he was not going to remain in the asylum any longer; that he had already shown what he could do, and that he would murder the doctor. The patient died at the age of seventy. The motives, when existent at all in this case, were insane from the beginning, yet the man evinced premeditation and skill, as dozens of such lunatics do. In this case there was evidence of the clearest kind of the erroneousness of Dr. Fordyce Barker's dictum that insane projects are not affected by outside circumstances, for this man, evi-

dently a strict Presbyterian, was only prevented from brain-ing Dr. Mackinnon, while acting as precentor, by his regard for the sanctity of the occasion. If a man, with imperative conceptions of the nature of those indicated in "Whisker Willie's" case, could restrain himself whilst under the influence of a healthy conception of the nature indicated, how much more could a delusion based on reasoning be controlled under healthy conceptions of a much more insinuating nature.

I shall cite, before concluding, a few instances of purely insane attempts of no special relation to the foregoing, only to render the paper somewhat more complete, though disjointed. The attack on Dr. J. P. Gray was of purely insane origin, and does not come within the scope of this review. The murder of Dr. Marchant was also of purely insane causation. An attack was made on Dr. Carriel, of the Jacksonville Asylum, by a case of chronic insanity, from insane motives.

Three attacks have been made upon myself from purely insane motives—one patient because he believed I had seduced his wife, and one because of a delusion that I had been an agent of the British Government, active in sending him to Australia as a convict for political offences. The third was made by a patient, who claimed to be inspired.

Dr. Parsons has informed me of the following cases: A patient made a violent assault on a physician's genitals, impelled by the delusion that he kept the female patients for improper purposes. A young girl, impelled by a similar delusion, attempted to put a physician's eyes out by throwing a piece of iron, weighing several ounces, with great violence against his head. In one of the cases last cited from Dr. Parsons, there was some evidence of reasoning on the delusion, or the attempt would not have been made on the genitals.

Do these cases not afford, when carefully examined, a full basis for concluding: *First*—That the question of motive should be the last thing considered in the diagnosis of insanity in a criminal? *Second*—That the insane may commit crimes from "sane motives?" *Third*—That the insane may commit crimes, arising from a logical process of reasoning based on delusive conceptions? *Fourth*—That the insane may commit crimes from insane motives, yet allege for the same sane motives? *Fifth*—That even an imperative conception, which urges a patient to immediate action, may be interfered with by a healthy conception, and produce an apparent vacillation in the patient's purpose?

SOCIETY PROCEEDINGS.

PROCEEDINGS OF THE NEW YORK NEUROLOGICAL SOCIETY.

Eighty-first Meeting, December 5, 1882.

A regular meeting of the New York Neurological Society was called to order at eight o'clock in the evening, at 12 West 31st street, the President, Dr. E. C. Spitzka, occupying the chair. There were present the following members: W. E. Brill, W. H. Dwinelle, L. C. Gray, Wm. L. Hardy, L. Weber, G. W. Jacoby, C. L. Dana, W. J. Morton, L. Putzel, M. P. Jacobi, A. D. Rockwell, G. Hammond, E. C. Harwood, and Drs. Spencer, Jacobus, Maxwell, Fruitnight and others as guests.

The minutes having been read and accepted, a communication from the Council was made, recommending the reinstatement of Dr. Ralph L. Parsons, now of Greenmont, and formerly Superintendent of the Blackwell's Island and the Flatbush asylums. This recommendation was made on the ground that the removal of the Doctor's name from the roll was the result of his change of residence, and not of a neglect on his own part. On motion, Dr. Parsons' name was replaced on the roll.

The Council also reported favorably on the following candidates for membership: T. M. Taylor, M. D., and A. E. Ayres, M. D.

Dr. Spitzka then reported the "case of an infant surviving four months after removal of a large portion of the brain." He opened his remarks with an apology for their incomplete condition, he having sent his only copy of the notes for revision and amplification to the physician who had sent him the specimen, and they have not been returned. He, therefore, proceeded to present the specimen, and to report as much of the history as he was able to supply from memory.

It appears that about four months before he received the specimen, a German woman in Hicksville was confined by Dr. Edward Rave, of that town, of a child presenting a large tumor at the posterior part of the head. The surface was somewhat convoluted, and the mass had a bluish color; it had a fluctuating feel, and was supposed to be either an encephalocele or a meningocele. The pedicle of the growth was not over an inch in diameter, the tumor itself about three inches in its longest diameter, which was the antero-posterior one. These measurements relate to the tumor as observed when the infant reached its fourth month.

As the child developed quite normally in many respects, and exhibited, aside from a few convulsive attacks, no profound signs of brain disturbance, and as only a clear fluid followed the introduction for a short distance of an aspirating needle, Dr. Rave, assisted by Dr. Overton, the President of the County Medical Society, removed the mass, believing that, while the child was doomed as it was, its chances for life could be improved, however slightly, by removing the tumor and closing the opening of communication by a cicatricial tissue, particularly as ulceration of the cutaneous covering was about to lead to a spontaneous opening. This unprecedented and ultra-heroic operation was accordingly performed. A small artery running in the meninges required ligation, otherwise there occurred nothing unusual, and the child did not appear to show any bad results. A day later it had a recurrence of the convulsions which had been noted before, and about eleven days later died. Unfortunately a *post-mortem* was not permitted.

On examination, the tumor was found to consist of the cerebral meninges and about one-half of the brain-mass consisting of the posterior portions of the cerebral hemispheres; the sulci and fissures being in part identifiable, and including the intraparietal sulcus. Each hemisphere was represented in the encephalocele, and each lateral mass contained a dilated ventricular cavity. Towards the opening of communication the cerebral tissue was much attenuated, and at the rim of this opening entirely absent in spots, only the membranes establishing a communication between the extra-cranial and intra-cranial solid contents. The cerebral wall was also very thin at the base of the hernia, where aspiration had been made. There was a fibrino-purulent pseudo-membrane on the inner and lower faces of the left brain-mass, and nowhere did the two detachments from the hemispheres communicate.

A most remarkable feature of the case was the fact that it was associated with a maternal impression, and with one of such a character as to strongly sustain the view of those who, like the reader, believed in the existence of such impressions and their potency to produce aberrant development.

When about five months pregnant, while standing in the yard, the mother saw her husband dive his knife into the abdomen of a goat which had been slaughtered, and the sight of the suddenly protruding visceral mass shocked her extremely, she falling back and clutching the nape of her neck. The impression haunted her for some time, and when the child was born, and she saw the hernia, she made the remark (which directed the Doctor's attention to the matter), "Oh, the intestines of that goat!" The question of the existence of maternal impressions was a disputed one, with some it was tantamount to heresy to science and credulity to old woman's tales to believe in them. The writer had seen and read so much, however, of these and similar instances, that he thought one risked little in admitting their possibility of that which was recognized to be more than a probability by stock-breeders, who had a wider and more systematized experience, as they certainly followed more rational principles than human breeders.

Dr. Morton opened the discussion by asking whether any special motor or sensory disturbances had been noted. The reader replied that he had prepared a detailed list of questions on these heads, but had not yet received the answers as he had stated at the outset.

Dr. M. P. Jacobi dissented from the reader's belief in the existence of maternal impressions. There was no parallelism between the deformity alleged to be produced by them and the impression; many of the cases described were fabulous, and others ill-sustained by evidence, while there was a lack of constancy in results.

Dr. Weber thought that this was certainly a most remarkable operation, one that had never been performed before, and whose use he could not recognize.

Dr. Spitzka said that he was far from recommending the repetition of the operation. He had reported it because he hoped to complete the record of what approximated a vivisection in many respects. While he did not think that we could hope to operate successfully in such large hernias as this one was, yet that the

surgical tolerance shown might prove an encouragement to the bolder treatment of smaller tumors, particularly of meningoceles. As to the matter of maternal impressions, he stated that it would be absurd to maintain that the result in the child was necessarily a photographic reproduction of the impression on the mother. It argued an ignorance of the mechanism of the molding of the embryonic shape to believe that the doctrine of maternal impressions influencing foetal development involved the reproduction of the superficial features of a given impression. On the contrary, it was well known that the embryonic foetal deformity extended much deeper. For example, in a case reported by Wille, of Basel, the mother having been frightened by the unexpected appearance of a beggar without a nose, the child was found, not noseless, as the old-woman's theory would require, but with hare-lip, platyrrhinism, and a fusion of the cerebral hemispheres in the middle line. The speaker proceeded to cite a number of other instances, and concluded by saying, that inasmuch as it was universally admitted that the children of a woman by a second marriage might resemble her husband by a first marriage, and no somatic reason could be assigned for this otherwise than the maternal impression; and inasmuch as many of the phenomena of alleged inheritance could be explained on no other ground, it would be hasty to relegate the numerous well-observed cases to the domain of the accidental. It was not the antiquity of the view about maternal impressions, as documented even in the Bible with regard to a certain sheep-stealing transaction, but a close study of the earlier embryological processes, which had converted the speaker from a skeptic to a firm believer in the doctrine of maternal impressions. Nowhere was there more of the mysterious and unexplained than in embryology. It could not even be maintained in the light of our present knowledge that there was anything beyond "Eisner's axial thread" in the human spermatozoon to indicate why the human embryo developed in accordance with its vertebrate ancestry. How very subtle the problems connected with this subject were, the speaker believed, was demonstrated by the impalpability of many of the causes which determined the coarser molding of the embryonic body. The finer and more detailed features were entirely beyond our ken, and we were reduced to theory, and to what is better than theory—empirical experience—to explain them. It was a fact, the speaker claimed, that the

drunkenness of a father at the moment of procreation produces imbecility or epilepsy in the offspring; that mental disorders in the mother, particularly in the earlier months, were almost certain to excite their nefarious influence in a premature birth, in the delivery of a monstrosity, or in the insanity, deformity or epilepsy of the descendant; and in view of these admitted facts it was no longer proper to pass by the observations of maternal impressions with a common-place sneer. If insanity or drunkenness could affect the development of the germ, so could emotions. If the varnishing of the shell of a hen's egg could produce a monstrosity, any physical influence might. Remarkably enough, in the three last cases of spina bifida observed by the speaker, two were attributed by the mothers to sudden jolts while out driving at early periods of pregnancy, and another to a fall, the main concussion being experienced in the region of the sacrum in all these cases. The connection between the injury and the monstrosity was not scientifically demonstrable, but Dareste demonstrated that ova could be retarded in development by the vicissitudes of railway transportation.

Dr. Weber then read a paper based on the observation of "Some Cases of Acute Cardiac Disease complicating Locomotor Ataxia."

The writer opened his paper with a consideration of the facts reported by Grasset, which tended to establish the existence of a casual relationship between typical locomotor ataxia and certain cardiac anomalies. Berger and Rossbach reported similar cases, without being able to determine whether the cardiac or the spinal disorder developed first. The standard authors were, as the reader said, silent on the subject, and the only observation as to the circulatory apparatus in posterior spinal sclerosis which could be considered related to the question, was that of Eulenberg, who found diminished tension in his sphygmograms of ataxics. His observations appeared to be confirmed by those of Charcot, who found the pulse rate of such patients from ninety to a hundred.

Dr. Weber then related the following history of a patient who had come under his own observation, the reader believing that in some way the cardiac disorder was secondary to the spinal disorder.

"H. F——, aged forty-five; German; married; merchant. First consulted me in February, 1879. He is a tall but thin man, of pale, yet not cachectic appearance, and of a very nervous temperament. Family history good; no neurotic taint. He acknowl-

edges having had sexual intercourse freely in his early manhood. He does not at present complain of any weakness as regards his sexual powers, but he feels rather exhausted and has pain at the back of his head on the day following coition. His children are vigorous and healthy, and the patient has had neither syphilis, rheumatism, nor other serious disease. Latterly he has found it difficult to attend to his business, which requires his being up and about and on his feet throughout the day. Fulgurating pains and severe dull pains in the joints have occurred during the past two years, but they have never been severe enough to confine him to his bed. With this he has become more irritable than formerly; his sleep has become poor, but no paræsthesia; neither bowel trouble nor bladder difficulty has been noted. Recently, in taking his meals, he has noticed that the morsels of food will not glide down the œsophagus as readily as formerly, and that he has to make a decided effort to get them down. This symptom of dysphagia I have noticed, in common with other observers, pretty regularly among the earlier signs of locomotor ataxia. In the physical examination of the patient I found no evidence of visceral disease, but noticed a pulse of ninety beats per minute. Complete absence of left patellar tendon-reflex, and great diminution of right were also noticeable. When his eyes are closed, the patient cannot stand without swaying to and fro. Nor can he stand or hop about on one leg, although he does it a little better with the right than with the left leg. His gait is not ataxic, and he has no numbness of his feet. There is, however, a good deal of paræsthesia of the lower extremities. The coarse muscular power is fairly good; but all continued muscular efforts soon tire him. Writing also. There is well-marked myosis, no reaction of pupils to light. An ophthalmological examination, made by Dr. Knapp, corroborated the fact of the presence of the Robertson pupil, but failed to disclose any retinal changes. *Diagnosis*: Disease of the posterior columns of the cord, slowly ascending. *Treatment*: Extract. physostigmat., one-tenth grain, four times daily; evening dose of brom. sod. with pepsin and hydrobromic acid; half-bath of about 80° and of two-minutes' duration, to be taken in the morning, three times in the week. Galvanic current to spine, also three times a week. Restriction as to sexual intercourse and general regime. The application of electricity was found not to agree with the patient. It irritated and excited him, and was consequently discontinued. The half-baths taken as described above were introduced and

systematically used in locomotor ataxia by the late Dr. Runge, Physician-in-Chief of the Hydropathic Institute at Nassau, Germany. In his treatise on hydrotherapeutics, he recommends them very highly in the treatment of this disease. I may be permitted to say in this connection, that, in the present case, as well as in several similar ones, and likewise in a number of instances of spinal neurasthenia, I have been much pleased with their beneficial effects."

"The above treatment was continued until May 15th, with little interruption, when small doses of ergot and belladonna were substituted for the physostigma in order to reduce the hyperidrosis, which was a source of annoyance to Mr. F——. Later on the patient went into the country, continuing there the baths in the shape of a daily sponge-bath, but taking no medicine. I saw no more of him until December, when he reported himself worse again in consequence of overwork. The right patellar tendon-reflex had now also disappeared. In other respects the patient was *in statu quo*. He was again put on the physostigma powders and half-baths. This treatment was kept up for three months. His sleep had meantime become sufficiently good to dispense with the bromides. In the summer of 1880 he went with his family to the White Mountains, where he was taken, in the night of August 1st, with acute and severe symptoms concerning the heart and lungs, which confined him to his bed for two weeks. He next went to Saratoga, where he had another attack of orthopnœa, occurring at night. I saw him again in the city in the night of September 5th. He was then suffering from an attack of severe orthopnœa, coughing violently and expectorating a good deal of frothy mucus of a pinkish color. Râles could be heard all over the chest as if he were going to have acute œdema of the lungs. His heart beat very fast and pericardial *frémissement*, and friction-sound were unmistakably present. The systolic sound was somewhat muffled at the apex. I was informed that this paroxysm had come on immediately after sexual intercourse, and that the previous ones at the White Mountains and Saratoga had occurred in much the same manner, and had apparently been brought about by the same cause. I gave him a few drops of veratrum and stayed with him an hour, when he ceased coughing and fell asleep."

"A careful examination, made on the following day, confirmed the diagnosis of pericarditis, and probable endocarditis. But I

failed to discover in the etiology anything except the probable influence of the sexual act, which he had been again indulging in more freely while in the country. The patient was kept quiet, and a blister applied over the heart. On September 19th he had another attack of orthopnoea, less severe, again following sexual intercourse. September 24th I noticed that the fifth intercostal space retroceded at the heart's systole. A friction-sound was no longer audible. October 2d I heard for the first time a systolic mitral murmur, associated with accentuation of the second sound of the pulmonary artery. This made it pretty certain that endocarditis as well as pericarditis had attacked the patient at the same time. The indulgence of sexual intercourse probably furnished the immediate cause of the development of the cardiac disease, while for the remote cause we would have to look to the spinal affection and its weakening influence upon the circulatory system, as explained by Charcot and Eulenburg, and particularly marked in this case. He was ordered tonics and small doses of digitalis, which he continued more or less during the winter of 1880-81. Sexual intercourse he was forbidden. The murmur remained the same, but the ataxia did not progress. He was able to attend to business in a moderate way, and had no further attack of orthopnoea until February 20, 1881. This attack occurred again at night, but the immediate cause was not known—perhaps not acknowledged."

"In March, 1881, he had a pretty severe attack of lumbar neuralgia, requiring morphine injections."

"He now prepared to go to Europe. Before sailing he consulted Dr. Alonzo Clarke, who also pronounced his cardiac trouble to be mitral. The summer of 1881 he spent at Nauheim, in Germany, an indifferent thermal bath and popular summer resort for ataxic patients. The following winter he spent at the Mediterranean, and the past summer he spent again at Neuheim. During his sojourn abroad his cardiac affection did not give him much trouble. In the course of eighteen months he had but three moderately severe attacks. He returned about a month ago."

"His general condition is now not quite as good as it was when he went abroad; but in the main the disease of the cord has not made any marked progress. There is to be noted the same retrocession of the fifth intercostal space as before observed. No friction sound, but a systolic apex murmur, although somewhat softer than previously, is at present audible. Pulse fast, but

rhythmical. No marked hypertrophy or dilatation of right ventricle; less accentuation of second sound of pulmonary artery than before. Again, the systolic murmur is barely heard at the lower angle of the left scapula. When a systolic murmur is due to well-marked mitral regurgitation, it is distinctly audible in the above region, as well as at the apex. In nearly every case of mitral incompetency under my observation, I have heard the systolic murmur just as loud at the lower angle of the left scapula as in front. From this and other physical signs already mentioned, I am inclined to believe that the endocarditis in Mr. F——'s case has not led to as much retraction of the mitral valves as it was feared it would in the commencement of his cardiac trouble."

At the conclusion of the paper, Dr. George W. Jacoby gave a careful recapitulation of the literature alluded to in Dr. Weber's paper, and without dilating on his reasons dissented from Dr. Weber's conclusion that the cardiac disorder followed the spinal disease.

The chairman suggested that several important theoretical questions were involved in the subject, which might, if fully discussed, have led to a proper appreciation of the relation stated to exist by Dr. Weber. It was well known that cardiac crises occurred in locomotor ataxia, and it was possible that analogous functional difficulties might lead to organic complications. The fact that the disease was supposed to be high up in Dr. Weber's case was also suggestive. The trineural fasciculus, according to Krause, originated in the cervical cord; now this fasciculus gives off branches to the vagus, and disease of the cord might affect the cardiac innervation through this channel.

Dr. Weber concluded the discussion by saying that he was familiar with the authors cited by Dr. Jacoby, and had presented the case chiefly because the occurrence of cardiac disease was unquestionably independent of the ordinarily assigned causes, and undoubtedly secondary to the spinal symptoms as to time. He admitted that numerous cases must be collected before conclusions could be drawn, but in the meantime he had ventured to submit this one reported by him as a pertinent case.

In view of the advanced hour, the discussion of the subject, "A Definition of Insanity," was, on motion, postponed, and after the Chair had read a proposed definition the Society adjourned.

Eighty-second Meeting, January 2, 1883.

A regular meeting of the New York Neurological Society was held at No. 12 West 31st street, on the above mentioned date, the President, Dr. E. C. Spitzka, occupying the chair. There were present Drs. W. S. Roberts, Leale, G. Jacoby, L. C. Gray, L. Weber, Brill, Harwood, W. J. Morton, Wm. A. Hammond, Dana, Græme Hammond, and as guests, Drs. Webster, Wyeth, A. C. Post, H. Knapp, Darling, Wendt and a large number of others.

The minutes having been read and approved after a slight correction by Dr. Weber, the Chair called for the report of the Committee on the Constitution and By-Laws. Dr. Hammond, on behalf of the Committee, reported that owing to an unusual press of business the matter had been overlooked, but would be duly attended to.

The Society then proceeded to the election of Dr. A. E. Ayers, who, on motion, directing the Secretary to cast the ballot of the Society in his favor, was declared elected a member. The name of Dr. Taylor was withdrawn.

The Chair then announced the death of Dr. A. N. Dougherty, of Newark, one of the original members of the Society.

Dr. Weber then presented a specimen of occlusion of the basilar artery by a thrombus.¹ There was a syphilitic history, and there had been varying symptoms of hemiparesis of the right side, dizziness, etc., which culminated in a severe convulsive spell, in which the patient died. On the autopsy the thrombus was found to have originated in the right vertebral artery and extended into the basilar, occluding it and terminating in a slender pointed prolongation.

Dr. Wyeth, who had been referred to by Dr. Weber as having been present at the autopsy, recollected the case, and reminded Dr. Weber that they had both been struck then by the similarity of the symptoms in their general course to those described by Heubner for arterial syphilis. He asked Dr. Weber whether he had not considered the fatal termination due to anæmia of the medulla oblongata, to which question Dr. Weber replied affirmatively. Dr. Wyeth then proceeded to say that he had seen exactly such a case terminate fatally two weeks before. From the similarity of the symptoms *intra vitam* to those noted in Dr. Weber's case some years prior, he concluded that the same lesion

¹ See original articles of this number.

existed, and that anæmia of the medulla oblongata had been produced. And, as predicted, on making the autopsy, a clot was found at the bifurcation of the basilar into the posterior cerebrals. In fact, the two cases were in all respects as exactly alike as two things could well be.

Dr. Gray : Was an ophthalmoscopic examination made ?

Dr. Weber : No.

Dr. Hammond : I think the best general indication in syphilitic cases is the eccentricity of the symptoms.

The Chair : Will Dr. Weber be kind enough to repeat the exact location of the thrombus. I believe there is a misapprehension somewhere !

Dr. Weber : I believe that I said distinctly that it was at the union of the vertebrals with the basilar !

The Chair : Then there was a very great difference between Dr. Wyeth's case and Dr. Weber's, if the Chair understood Dr. Wyeth correctly. The clot in his case was at the division of the basilar into the two posterior cerebrals ?

Dr. Wyeth : Yes ; I must say that I entered the room when Dr. Weber had arrived at the close of his communication, and was not refreshed as to my recollection of the rather remote case.

The Chair : That would make a fundamental difference as to the existence equally in both cases of anæmia of the oblongata. Rather the contrary condition would exist in such a case as Dr. Wyeth's.

Dr. Wyeth : Well, there would be some anæmia.

Dr. Hammond then read a paper on "Allochiria, or Confusion of Sides."

Dr. Hammond, after relating the history of a patient whom he examined on behalf of a party in a civil-damage litigation, detailed the results of his examination, and added certain commentaries, as follows :

"The touch of a finger, the scratch of a pin, or a deep puncture with the blade of a pen-knife was equally unfelt by this patient on the right leg. On making the like experiments on the left leg, he complained of pain when the knife was stuck into it, and automatically carried his hand to the place which he supposed I had punctured, but, instead of touching the spot injured, he indicated the exactly corresponding situation on the other leg. Repeated experiments led to like results. He had sensibility in the left leg, but referred all impressions to the other side. Dr. Stimson assisted in verifying these results."

"I came to the conclusion that the patient was suffering from antero-lateral or lateral sclerosis, with the implication of the posterior horns of gray matter, and probably of the membranes of the cord to a slight extent."

"With the diagnosis, however, I have little to do at present, my intention being to restrict what I have to say to the crossed sensibility which the patient exhibited. To this condition the name *allochiria* (*ἄλλος, χεῖρ*) has been given by Professor Obersteiner, of Vienna, who was the first, so far as I know, to call special attention to the phenomenon, though it had been incidentally alluded to by Leyden, and one or two others, as an occasional symptom of locomotor ataxia. A case following severe cranial injury has also been reported by Ferrier."

"Of Obersteiner's four cases, two were of locomotor ataxia, one was hysterical, and the other was the result of severe and direct injury of the spine. Death ensued in this last case, and, on *post-mortem examination*, it was found that there had been inflammation of the first, second and third lumbar vertebræ, meningitis, and extensive transverse inflammation of the cord. The posterior columns, for a considerable distance above the seat of the injury, were in a state of sclerosis, and the posterior horns of gray matter in portions of the cervical enlargement were 'transversely divided by a peculiar, structureless, transparent mass, intensely colored by carmine, and very similar to the mass which is found round the larger vessels in inflammatory processes in the cord.'"

"I have quoted Obersteiner's own language because I think it is to such a lesion of the posterior horns of gray matter as he describes that the phenomenon of *allochiria* is to be ascribed. Neither he nor Ferrier offer any explanation of the mechanism of its production. On the contrary, they declare their inability to do so. Certainly *allochiria* is not a usual symptom of sclerosis of the posterior columns of the spinal cord. I do not think it is ever met with in uncomplicated cases of this disease, nor do I think it is a possible condition in such instances. For the complete understanding of the subject, a few words relative to the anatomy and physiology of the cord are necessary. The posterior tract of gray matter is probably the only channel by which sensory impressions reach the brain, the posterior columns having, in their normal condition, nothing whatever to do with the transmission of such impressions. But, before reaching the posterior horns, the posterior roots of the spinal nerves pass through the

columns of Burdach, and, when these are the seat of inflammation, as they are in locomotor ataxia, disturbances of sensibility, such as hyperæsthesia, paræsthesia and anæsthesia, are produced in the parts below by the pressure exerted upon these roots.

It is quite certain, as Brown-Séquard, Lockhart Clarke, Gerlach and others claim, that there is an almost complete decussation of the sensory fibres within the gray matter—those from the right side of the body passing over to the left side of the cord, and *vice versa*. We are taught these facts, not only by experimental physiology, but also by the instruction we derive from the study of cases of disease or injury of the cord. Disregarding, as of no importance in the present connection, the fibres that do not decussate, we have in the exhibited diagram an explanation of the phenomena in question.

Now, in sclerosis of that portion of the posterior column called the column of Burdach, the lesion is almost always symmetrical, both sides being equally and correspondingly affected. As a consequence, we have in the latter stages more or less profound anæsthesia and retardation of the conveyance of sensory impressions in both lower extremities, and this not only from pressure exerted upon the posterior roots of the spinal nerves, but from an extension of the morbid process to both posterior horns of gray matter. Allochiria is in such cases an impossibility, for all channels to the brain are closed, wholly or in part, and the patient either does not feel at all or feels imperfectly in the parts below.

But, in those cases of disease or injury of the posterior horns of gray matter, whether they be primarily involved or secondarily, as in locomotor ataxia in which allochiria exists, either the lesion must be unilateral, or, if both horns are involved, the lesions must be at different levels. A sensation starting in the right lower extremity would in the normal condition follow these fibres (indicating) to reach the cortex, where it would be referred to its proper situation. But suppose there is a lesion in the left posterior horn, then the sensation would be directed through the gray commissural fibres to the right posterior horn, and would reach the cortical centre in the right hemisphere, which is in relation with fibres coming from the left side of the body. The sensation would, therefore, be referred to the opposite side through these fibres. This would constitute the condition of allochiria, in which all impressions made, for instance, on the

right side of the body would be felt on the left, while those made on the left would be felt in their proper situations."

"But suppose there is another lesion. If this is symmetrical with that on the right side at *i*, it is evident that no sensorial impressions from either side can reach the brain; there will be absolute anæsthesia in all parts below the lesion. Let us further suppose, however, that the other lesion is lower down, at *m*. Then impressions coming from *k* will be diverted to the left side on reaching the obstruction, and, arriving at *i*, will either be altogether arrested, leading to complete anæsthesia at *k*, or will be again diverted, and, reaching *e*, though with their strength greatly impaired, will be imperfectly felt at *k*. Such lesions explain those cases in which there is absolute anæsthesia on one side of the body, with sensation on the other side for impressions coming from both sides. They also show, as Obersteiner asserts, that anæsthesia is not a necessary concomitant of allochiria."

"In the only case of allochiria in which a *post-mortem examination* has been made, and to which I have already alluded, Obersteiner found, among other abnormal conditions, disease of both posterior horns of gray matter. The morbid process was not continuous, as it is stated that it was not perceived in all the sections. It was situated at the narrowest part of the posterior horns, being so placed as to interrupt the decussation of all the nerve fibres, and hence to cause the transmission of sensory impressions upward in the side in which they entered—a condition which, equally with that I have described, would give rise to allochiria."

"It is a well-known physiological fact that section of one lateral half of the spinal cord gives rise not only to anæsthesia of the parts below on the opposite side of the body, but to hyperæsthesia of the parts below on the same side. This circumstance, which has not hitherto been explained, is, I think, satisfactorily accounted for by the theory I have proposed. For the parts below, corresponding to the cut half of the cord—for example, the right—not only remain in undisturbed relation with their proper cortical centre in the left hemisphere, but this latter receives also the sensory impressions coming from the left side. There will therefore be increased sensibility in the right side. Numerous facts in morbid anatomy and pathology could readily be brought forward in support of this view. This explanation of the cause of crossed hyperæsthesia is different from the ingenious one of Ott, though probably not irreconcilable with it."

At the conclusion of the paper the Chair remarked that it deserved a very thorough discussion, as it embodied many controversial points.

Dr. Morton did not think that any controversy was involved; it was a simple question of observation. He had observed the phenomenon in a woman to whom he applied static electricity. She insisted that her right leg was struck by the spark when it was in reality the left to which it had been applied. Her sense of contact and temperature was normal, and there was some hyperæsthesia at one time. He thought the trouble was in the cortex.

Dr. L. C. Gray being called on by the Chair, said that, failing to understand the explanation Dr. Hammond gave, he lacked a basis for discussion.

Dr. Hammond explained his diagrams more minutely, and said that sensation did not essentially involve the functional activity of the brain. He added that the white columns were not the conductors of sensation, that all sensation had to pass through the gray matter, and that all experiments which claimed that destruction of the posterior columns produced abolition of sensation were fallacious, because the experimenters had in the operation divided the posterior root zones as well. It was these and not the white substance, whose involvement produced the anæsthesia and ataxia of posterior sclerosis. He was surprised that Dr. Gray shook his head at this point, and asked him on what authority he maintained the contrary of his proposition.

Dr. L. C. Gray thought that the experiments which proved that the gray substance alone conducted were not over reliable, and that this would be admitted if they were more generally repeated. In the broad way in which the results of these experiments were presented by Dr. Hammond, they struck at the very root of our traditional conception that gray matter originated, and white matter conducted nerve oscillations. They are, moreover, flatly contradicted by the researches of Miescher, contained in Ludwig's *Arbeiten*, and by those of Woroschiloff. Of course, that gray matter has a limited power of conduction is undeniable, and is anatomically vouched for by the presence of delicate and relatively short nerve-fibres; but that it conducts for such distances as that from the periphery to the brain was, in the speaker's opinion, anatomically absurd and physiologically incorrect.

Dr. Spitzka thought that the position of both gentlemen who

had spoken was heretical. It was an accepted fact that gray substance could conduct, even when as in the case of the cord all the white and much of the gray matter was destroyed. And, indeed, there was an anatomical basis for this, as not only amyelinic by also myelinic nerve fibres formed an intricate plexus in the gray substance proper. Recently Exner had verified and extended the observation of Meynert, Clarke and Deiters, even for the cortex. As to Dr. Hammond's assertion it was most sweeping. He would ask Dr. Hammond how he accounted for the accumulation upwards of the column of Goll or the direct lateral myelo-cerebellar tract. If anything was proven by the phenomena of secondary degeneration, the study of embryonic development and daily clinical experience, it was that these tracts represented clean cut sensory projections, destined for transmission to the higher centres. That the fibres building up these tracts passed at certain altitudes through the gray substance altered nothing of these facts. The lateral myelo-cerebellar tract passed through the cell group known as the columns of Clark. The gray substance received fibres from the roots continually as we passed upwards, but it did not increase in bulk as it should were it the sole conductor of these fibres to the brain. It gave off these fibres at slightly higher levels to the two great centripetal tracts. Of these tracts he had reason to believe that Goll's column was tactile and Flechsig's tract devoted to the muscular sense.

Dr. Hammond admitted that these tracts were well defined, but about the column of Goll we knew nothing except what was derived from the study of secondary degenerations coupled with other lesions. The fact remained that the entire cord with the exception of the gray substance being destroyed all impressions were conveyed as well as before——

Dr. Spitzka : Does Dr. Hammond mean without any change whatever ?

Dr. Hammond : Certainly !

Dr. Spitzka : It seems to be generally accepted that transmission is delayed as to time by such operations, and that the delay increases with the operative limitation of the gray area.

Dr. Hammond : Brown-Séquard does not say so. The columns of Flechsig to which Dr. Spitzka refers are in the lateral columns, and while I spoke of the white substance in general I had the posterior ones in mind. I believe that in the posterior

columns we have the co-ordinating fibres, and that this accounts for the development of ataxia in disease of these columns.

Dr. Græme Hammond: I should like to ask Dr. Spitzka if the posterior columns are sensory, how we get abolition of the patellar tendon-reflex when the posterior columns are diseased?

Dr. Spitzka: If anything is well established in this disease, it is that a lesion in the posterior root zones is to be looked for when this reflex is destroyed. It is due to the interruption of the centripetal impression that the reflex arch being broken, the reaction is not evoked.

Dr. Hammond: I should like to ask the gentlemen who try to get over the point I have advanced by questioning my authorities, what authority they can cite to sustain them?

Dr. Spitzka: We are in the position of those who defend axioms so generally acknowledged, that the mass of authority in their favor is so great, that one finds one's self unable to reproduce the list. But certainly Schiff's experiments, most accurately performed, are opposed in their results to Brown-Séquard's.

Dr. Wm. A. Hammond: I can only say that I have felt humiliated to have to recite facts of so primitive a nature before a neurological society.

Dr. L. C. Gray: If reiteration of facts that are questioned constituted argument, Dr. Hammond would be unanswerable; but his arguments reminded the speaker of the Bishop in Hud-dras, who

" Strengthened his doctrines orthodox
With apostolic blows and knocks."

There being no further business, the Society adjourned.

Eighty-third Meeting, February 6, 1883.

A regular meeting of the New York Neurological Society was held at No. 12 West 31st street, February 6th, at a quarter-past eight, the President, Dr. E. C. Spitzka, occupying the chair. There were present Drs. Leale, Wm. Morton, L. C. Gray, Hardy, Brill, G. Hammond, S. N. Leo, Van Santvoord, T. A. McBride, E. C. Harwood, and others.

After the minutes had been read and approved, the President said: Following closely on the death of Dr. A. N. Dougherty, of Newark, comes the notice of the demise on the 23d of Janu-

ary, of another member of this Society, Dr. George M. Beard. Dr. Beard was admitted a member of the New York Neurological Society April 2d, 1879, under the resolution passed on the dissolution of the Society of Neurology and Electrology. He read two papers before this body respectively, entitled, the "Differential Diagnosis of Neurasthenia" (January 6th, 1879). and "Brief Remarks on the Study of Nervous Diseases in Europe" (October 6th, 1879), and was a regular attendant at the reunions, and a frequent participator in the discussions of the Neurological Society.

It was moved by Dr. L. C. Gray and seconded by Dr. Hardy, that a committee be appointed to draw up suitable resolutions. The motion having been put and carried, the Chair appointed Drs. L. C. Gray and Wm. L. Hardy as such committee.

Dr. S. N. Leo then read the paper of the evening on the question of "Trephining in Epilepsy,"¹ exhibiting a patient on whom the operation had been performed with good results.

The discussion was opened by Dr. Leale who asked how long the fits had been absent after the operation on the patient exhibited. Dr. Leo replied that the operation had been performed four months ago; that the patient had resumed his business, that of a cigar-maker; and with the exception of a fit or two occurring within the first four days after the operation, the patient had been free from them entirely.

Dr. Morton wished to know whether the author had been guided by the doctrine of localization in trephining, or whether he had followed any guide?

Dr. Leo replied that having the history of the blow, knowing exactly where it had reached the skull and feeling that the bone was roughened, and the soft tissues being indurated at that very spot, he had considered it justifiable to trephine there without any other indication.

Dr. L. C. Gray thought Dr. Leo's a well-timed paper, and was glad that the somewhat neglected subject of trephining in epilepsy had been again brought to our attention. One aspect of the question seemed to have escaped Dr. Leo's attention, namely, that while in removing a depressed piece of bone we remove the *cause* of the epilepsy, we may do so too late to cure the result, for the epileptic habit may be formed and kept up indefinitely.

¹ See original department of this issue.

The immunity of the patient for a few weeks or a few months did not prove a great deal. Dr. Leo here interposed saying, that in one case the patient had died of pneumonia about two years after the operation, and had not had a fit in the meantime.

Dr. Putzel wished to know where the serous fluid, spoken of in the paper, came from ; he could not understand its existence on any other ground than that of inflammation.

Dr. Leo said that the fluid was between the dura and the cranium, and that in no instance had the dura been injured, so that a communication with the arachnoid cavity was excluded.

The Chair asked whether the fluid had not come with a gush quite dissimilar to the dribbling which was observed when the sub-arachnoid fluid escaped. To this Dr. Leo replied affirmatively.

Dr. Græme Hammond recalled a case of his father's in which a patient with a history of epilepsy and of injury to the vertex was trephined, and although there was no depression or spiculum and no cicatrix of the scalp he recovered from the epilepsy.

Dr. Leale had had his attention called to a case where a circle of bone having been removed, an epileptic for a year, had at last reports had been free from fits.

Dr. Morton said that with regard to the case referred to by Dr. Græme Hammond, he also had some reminiscences to bring forward. There was a cicatrix of the scalp in that case, and the trephined button of bone exhibits a thickening. For two years, it is true, the patient went without fits, but Dr. Morton had met the physician in charge of the case and been informed that they had since returned.

Dr. Græme Hammond asked whether Dr. Leo's patient had received any internal treatment, to which Dr. Leo replied that they had been on bromides and strychnia.

Dr. McBride said that the patient exhibited that evening had been a patient for three years at the clinic of the College of Physicians and Surgeons, and had been treated without benefit for that period.

There being no further remarks, it was moved and seconded that the discussion of a definition of insanity which was on the programme be postponed.

The Society hereupon adjourned at half-past nine.

CHICAGO MEDICAL SOCIETY.

At meeting of December 18 of this Society, Dr. D. R. Brower read a paper on "Concealed Insanity with Reference to the Case of Mark Gray." He alluded briefly to the fact that an insane man had less power of control over his relations to abstract ethics than a sane man. That the insane should for some purpose of their own deny that they believe in the truth of certain previously existing delusions was, therefore, not surprising.

They might even admit that such delusions were insane for the purpose of escaping the confinement of a hospital, the ridicule of their companions, or of regaining control of their affairs. A striking case of this kind was that of Mark Gray. May 10, 1879, Mark Gray was judicially declared insane. He had a short time previously fired two shots at Edwin Booth from the dress circle of McVicker's Theatre, and was in the act of firing a third, when arrested. For a day or two subsequent to this attempt he was morose and reticent, and would answer in monosyllables only. He soon became communicative, boasted of his great histrionic talent, especially in Hamlet. He claimed to be much the superior of Booth in the rendition of that tragedy.

The want of motive for the crime, his extravagant statements and marked insanity of manner, led to suspicion of his mental condition. The delusion impelling him to the crime was then elicited. It was found that he claimed to be the son of Edwin Booth, and to have therefore inherited great histrionic talent. He claimed that Booth had abandoned him in his childhood; had deprived him of the education necessary to develop his talent, and had neglected his mother. He heard whispers as he went along the street: "There goes the bastard son of Edwin Booth." His fellow clerks tormented him by the same sort of whispering. He determined to interview Mr. Booth on the subject, and demand a monetary compensation. He came to Chicago April 22, 1879, but on a visit to the theatre was unable to see Mr. Booth. He went next night, and Mr. Booth, who was playing Richelieu, saw him, he claims, recognized him, made faces at him, called him by name several times, and made fun of his mother. He left the theatre determined to kill Booth for these insults. He purchased a pistol, and selected a suitable opportunity for firing the shots already mentioned. An examination of the patient showed that his face, head and body were abnormally asymmetrical. There

was no ascertainable heredity, but the father was an inebriate, and at the time of the patient's conception was suffering from alcoholic hepatic cirrhosis. Mark's history prior to the act was as follows: He had always been marked by inordinate conceit, and had had enormously exaggerated ideas of his own importance. He was for a time intemperate, but in 1876 became abstemious. He acted strangely about the house and would get up at night to declaim Shakespeare. He was reserved, kept himself away from the other members of the family. He would sit for awhile with his head in his hand, and would then strike stage attitudes. At this time the hallucinations already mentioned made their appearance. In consequence of his crime he was tried, found insane and sent to the hospital at Elgin, all his delusions being firmly fixed December 15, 1879.

He asked for his discharge, and was informed that, as he was still insane and still retained his delusion about being Mr. Booth's son, his discharge could not be granted.

The day following this interview he gave up declaiming, and when spoken to about his delusion said it was only a crazy notion from which he had recovered. His insanity of manner was still well marked, but for a year he persisted in this declaration, as well as in reading Shakespeare and declaiming.

On December 1, 1880, he refused to have his hair cut and wore it long, as it was more stage like. He practiced elocution incessantly, claimed to be a great Shakespearian scholar, and in histrionic talent far superior to his father, Booth. This conduct persisted for months.

In October, 1881, he informed Dr. Crane, the assistant physician, that Mark Lyon (his father), was Edwin Booth; that Pat Lyon, his uncle, was Junius Brutus Booth, Jr.; another uncle was John Wilkes Booth, and still another was Joseph Murphy, the comedian, who is a brother of the Booths. John Wilkes Booth was still alive. The report of his death was gotten up for political purposes. He was at this time informed that until these delusions were no longer accepted by him, he could not be discharged. He once more claimed that his delusions were merely crazy notions, and abandoned his theatrical declamation. All attempts to turn the conversation in the direction of theatrical matters failed, and eight months passed without any exhibition of delusions. He brought his case before a justice of the peace, admitted his previous concealment of his delusions with evident glee, was pro-

nounced sane by a veterinary surgeon, and was discharged. Soon after his discharge he stated his intent to travel as a "star," on his notoriety and his resemblance to his father, Booth.

Dr. Kiernan asked Dr. Brower what he thought of a physician who declared it was impossible for the insane to conceal their delusions, and if the asymmetry stated was congenital.

Dr. Brower said such a physician must be ignorant or unreliable. The asymmetry was congenital, and as corroborative evidence of insanity of a long existing type it was of value.

Dr. Kiernan then said that his object in troubling Dr. Brower with questions was to bring out into strong relief the conduct of certain experts for the prosecution in the Guiteau case. One of these gentlemen had, in the Grappotte case (*AMERICAN JOURNAL OF NEUROLOGY AND PSYCHIATRY*, 1882), stated that the insane did not conceal their delusions. How absurd such a claim was, is shown by the case just cited. This only corroborated numerous other cases in the literature. Matthews, a patient of Bethlehem, who had a markedly systematized delusion of very ingenious construction, was able to conceal this delusion so well that two physicians who examined him declared him sane. In a case cited by Erskine, the patient was able for a long while to conceal his delusion, until something was said about correspondence. He was tried a second time, and the most ingenious cross-questioning failed to elicit the delusion.

In a case observed by Forbes Winslow a patient concealed a delusion for more than two years, and was only detected by his obvious insanity of manner. In a case reported by the same author a man spoke in Latin respecting his delusion.

Dr. Brower said that trying questions of insanity by a judge and jury was pernicious absurdity. It was within the memory of all how within a few weeks a man had been discharged as sane by a jury, and went home and killed his wife and himself in consequence of an insane delusion, which the sapient judge and jury regarded as a sensible idea.

TRANSACTIONS OF THE SOCIETY OF MEDICAL JURISPRUDENCE AND STATE MEDICINE.

First Regular Meeting January 11th, 1883.

THE first regular meeting of the Society of Medical Jurisprudence and State Medicine of New York city was held at No. 12 West 31st street, the hall being crowded to its utmost capacity by a large and enthusiastic assemblage.

The meeting was called to order by Mr. George P. Avery, member of the New York Bar and Chairman of the Board of Trustees, who opened the proceedings with the following address :

GENTLEMEN :

It is not of my choice that I open this meeting or address you. I do both upon the written request I have here.

The object of this Society is fully stated in its By-Laws—it is to give, as far as the sciences of law and medicine furnish the means, a practical and definite solution of questions imbedded in State medicine and medical jurisprudence. The scope of investigation is intended to be broader than that of previous organizations of the learned professions of law and medicine.

It embraces every field in which lawyers and doctors should work together as yoke-fellows or restrain one class the other.

How great a variety of subjects invite your earnest consideration in which the present and future generations have deep interest ! The eye of the public will be on you if you show genius and philosophy in their presentations, for they touch life and health, pain and death.

The seeds of manifold diseases are secreted in each of the elements of nature in certain peculiar conditions. Let the medical profession embrace the opportunities that will be here offered to define, so far as they can, the conditions, the danger, the diseases incident to the remedies. If that profession can by any means keep the elements pure and healthy, and thereby prevent disease, the law should command the means, for it is palpable that prevention is vastly better than the risk of a cure.

The proof of the skill and power must be convincing—no quackery, no pretence. The jury of lawyers expected to pass

upon it will be critical, but kind and willing to be convinced upon a scientific demonstration. Once convinced, they will gladly do all in their power to aid in the work—hammer the present laws into shape or try to get them amended ; and inasmuch as the human constitution is of more value than State constitutions, try to adapt the last to the needs of the former. In cities, if need be, let the doctors see to it that every building has a healthy foundation ; every street, above, below and at its surface, is in a continuously healthy condition, and every building is kept impervious to disease by its plumbing, its ventilation and cleanliness. Outside of cities let them care for the forests, pools, marshes and a thousand and one nuisances, emitting miasma and malaria.

Let them see to it that every article or substance for the human system, for its nourishment, stimulant or medicament, be free from every deleterious element.

The medical profession presume to assume the care of the health, action and longevity of human beings from pregnancy to the last breath under all the circumstances and accidents of life. How much confidence can justly be put in it? How tell just what at the present state of its science it can do? Can the doctors detect the seeds of diseased death innate in man before their development, and eradicate them so that without unforeseen accidents happen, each head in life may be silvered? Now if so, from here send the fact forth to the world ; if not, in sorrow say so, and tell just how near you hope to come to it.

It is a known fact that one person may take certain diseases from another person or being. How tell in what cases and when, and what will remove the danger, and how much power should be assumed in epidemics? Tell of vaccination, and when and for what and its uses. These and all kindred subjects will not only interest this Society, but the general public. Such subjects as have been presented in this are not new to the medical profession. The learned doctors can hew to the time on them, if they will. Lawyers question, criticise, force them to do it. There must be law to aid in the accomplishment of much the doctors dare undertake. Let them have all the law they show they need, and no more. Protect the people both against all disease, so far as law is needed, and against the doctors, too. Hold them responsible for the result of their undertakings. If they are given the means desired, let them demonstrate to what extent the death-rate can

be lessened by them through them. If it is lessened, how quickly they will be adopted in every city and clime.

There undoubtedly will be uncertainty in their art. The misfortunes of humanity are too much for it. In spite of the best endeavors of the best, persons will become insane, criminal and negligent. These facts furnish a large number and variety of subjects for the critical examination of the lawyers and doctors. Many of them are familiar to the most of you. They are before the public through daily trials in the courts and discussions by societies and the omnipresent press. Upon the trials the evidence of the medical experts is often conflicting—too often confusing to courts and counsel, and juries are left to guess out a verdict. Does this come from the rules of evidence, the prejudice of witnesses, or the uncertainty of science? For the more perfect administration of justice it would be well to thoroughly investigate, and, if possible, find where the error lay, and correct it.

It is hoped that the subjects suggested or hinted at will be of such interest as to engage the earnest attention of all the learned men of both professions who desire the advance of the sciences, and to interest them until the science embraced by this Society shall be as far perfected as the genius of man can perfect it.

In the degree that subjects of interest cease to be brought forward to interest, societies decay and begin to live upon the accumulations of the past. The ambitious members then seek for fame, not by the advance of the arts and sciences through them, but by embalming their old absolute productions, and while living securing posthumous honors to themselves.

It is unprofitable to point out the errors, blunders, mistakes or follies of others for the purpose of ridicule and contempt, but it is well to hold them before the mind's eye as signals of dangers to be avoided. Let us have the best productions of the best minds and the best scholars, and inform ourselves upon the subject to be brought before us, and discuss and criticise with all kindness and courtesy. Let the humblest have the same privileges and encouragement as the most exalted, that each may be informed and made happier and a better citizen. Let us, in all good will, bid God's speed to all cognate associations. Let us endeavor to do and be such as to justify the right of this Society to the motto, "Excelsior." [Applause.]

The Recording Secretary, Dr. N. E. Brill, then read the minutes of the organization meeting held December 22d, 1882, and

there being no discussion or corrections offered, these were adopted. The following gentlemen were announced as the officers for the current year : Vice-President, Dr. Jarvis S. Wight ; Recording Secretary, Dr. N. E. Brill ; Financial Secretary, Samuel Livingston ; Treasurer, Dr. E. C. Harwood.

Trustees : Messrs. G. P. Avery, A. J. Delaney, Max F. Eller, and Drs. Jacobus, C. S. Wood and T. C. Finnell. It was also announced that the selection of a President had been referred to a committee, consisting of Mr. G. P. Avery and Drs. Wm. A. Hammond and E. C. Spitzka.

The Society then listened to the paper of Dr. Jarvis S. Wight, entitled "The Bearing of Hallucinations and Illusions on Testimony."

The paper was first discussed by Dr. Wm. A. Hammond, who stated that the hope expressed in the paper as to the providing of a remedy for the illusions of witnesses was itself illusory. The correctness of observation by the senses, which after all is relative, depends on the training which the subject receives.

Some people are remarkable for never seeing things as other people do. A notable instance of how observers may differ with regard to very simple occurrences was the historical one related by Sir Walter Raleigh. One day he witnessed a fracas in the Tower-yard. One witness honestly believed that the French Ambassador entering the tower was attacked by an Englishman, and that another man sitting on a stone got up and aided in the assault. Another equally honest account was, that the second alleged assailant had remained sitting on the stone throughout. In neither case had the witness the slightest motive to tell a falsehood. It was a matter of daily experience with lawyers that the accounts given by different witnesses of assault and battery cases were often conflicting. The speaker did not feel sure that he understood what Dr. Wight meant by delusion when he spoke of it as an illusion of the moral sense, and hoped Dr. Wight would explain his meaning. He did not believe that illusions could exist which did not involve the bodily senses. Delusions are rather strictly mental phenomena, at least that had come to be the accepted meaning of the term, and we ought to use these terms only in their strict sense—

¹ See original department, p. 1.

Dr. Wight (interposing) : I will accept the terminology of Dr. Hammond if he will agree to the meaning which I attached to it.

Dr. Hammond : I meant to ask for information.

Dr. Wight : I think my procedure an admissible one, and merely carried the accepted sense of "illusion" from the physical to the moral domain !

Dr. Hammond : But you have no right to do such violence to accepted terms.

Dr. Wight : If you admit the existence of a moral *sense*, you can have an illusion of that sense; if not, then call it a delusion.

Dr. Hammond : Then you really mean a *delusion* ?

Dr. Wight : I am content to accept the term if you will let the facts remain.

Dr. Hammond : I am not certain that I can agree to the facts ; the moral sentiments are not inborn; they are the result of education.

Dr. Wight : That statement is probably based on the admitted fact that the standard of right and wrong differs with different races of mankind, but the fact remains that certain fundamental moral conceptions are common attributes of mankind.

Dr. Hammond : Then Dr. Wight understands by moral sense the sense of right and wrong ?

Dr. Wight : No !

Dr. Hammond : There is no such thing as abstract right and wrong ; the moral sense of Boston differs from that of New York—

Dr. Wight (interposing) : And that of Brooklyn differs still more ! [laughter.] If Dr. Hammond will explain in what the retina which can perceive but fails to appreciate colors differs from the normal retina, I will undertake to explain the individual differences in the moral sense.

Dr. Hammond : I did not read the paper, I rose for information ; really the burden of proof lies with Dr. Wight. But to illustrate how highly the sense perceptions can be educated, I may be permitted to refer to Houdin, the French *prestidigitateur*, who could walk through a street, take note of the contents of several shop windows, and reproduce these impressions afterwards. He brought up his son to acquire this faculty, and although the boy did not originally differ from others of his age, he gradually attained a marvelous facility for observing multitudinous objects

correctly. Take for example the case of a woman on the street ; she will see another one pass, take note in a few seconds of everything she has on (and know how much it costs per yard, too), and be able to repeat what she has seen afterwards [laughter]. I think Dr. Wight could do much towards doing away with the evils of imperfect testimony by teaching us how to educate the senses.

The Chairman here called attention to the fact that as there was another paper to be read that evening, speakers would be limited to five minutes each.

Mr. E. H. Benn : It is somewhat difficult to do justice to so intricate a subject within such narrow limits as five minutes, but I shall attempt to indicate a few points which appear to me desirable themes for discussion. The relation of insanity to testimony is a most important one. Now while the contrast between fully developed insanity and unquestioned sanity is as great as that between night and day ; yet the transition across the border line is not abrupt, but as gradual as the change of day to night. It is as hard to say where sanity ends and insanity begins as it is to tell when a boy ceases to be a boy and becomes a man. I understand that where there is morbid delusion there is disease. I know of cases where such delusions have formed the basis of testimony. I know of one man who claimed that he found spirits under the shingles of his roof, and who, in spite of this fact, was considered sane enough to manage a large business and to be out of an asylum. As illustrating the great importance of an accurate observation by witnesses of what goes on before them, I may refer to a case tried in England in the old Bailey days. A man was arrested for suspected complicity in a capital offence. As he was being led off by the officers of the law he said a few words to his wife. According to one account, he said, "Keep yourself to yourself, and do not get married again." On this statement the attorney for the crown claimed, that feeling himself guilty, he had said these words in anticipation of his execution, and endeavored to construe this into a circumstantial evidence of guilt. According to another witness, however, the man had said, "Keep yourself to yourself and keep your own counsel." The Judge ruled that the jury had better not believe either account, and the man was acquitted.

Mr. Eller : I think one of the most important points connected with Dr. Wight's paper has been lost sight of in the discussion.

If it is a fact, as has been recently and strongly urged, that illusions are apt to arise in women while under the influence of certain anæsthetics, and their testimony—however honestly given—may falsely accuse a physician or dentist, and lead to his unjust conviction for an altogether illusive rape—as has occurred more than once—this should be established, and testimony given under such circumstances disregarded entirely.

Dr. Spitzka : I am surprised to hear Dr. Hammond assert that the moral sentiments are exclusively developed by education and association. The best psychologists are of the belief that they are in great part inherited, and the outgrowth not of the training of the individual, but of cumulative inheritance, as, indeed, in their rudiments the moral sentiments are inseparable from the emotions. I need not quote but one of the hundreds of cases with which psychological treatises are filled to show that perversions of the moral states are transmissible; the case is related by Hoffbauer. A daughter of robbers was as an infant intrusted to the care of a good citizen family, received an excellent training, and yet became an incorrigible thief, liar and masturbator as soon as she could walk. The history of the Jukes family, of northern New York, had been repeated *ad nauseam*. Of the 175 members of this family whose career was followed up, nearly all were thieves, prostitutes, epileptics or imbeciles. If these cases prove the transmission of the moral perversities, we have to admit the transmissibility of the moral character in general. I think that Dr. Wight's definition of an illusion is somewhat obscure—it does not actually demarcate the illusion from the hallucination, or even from the memory. A definition which I am in the habit of giving to my students, is the following : An illusion is the perception of an object really present in characters which that object does not really possess. This definition distinguishes the illusion from the hallucination, which is the perception of an object as a real presence when there is no object present to justify the perception.

Mr. S. B. Livingston : It seems to me that it must be the object of all higher educational methods to train the mind not only to perceive external objects in their real characters, but also to appreciate its own processes in an objective light. The difference between the mind of him who has this faculty and of him who has not is made manifest in the security with which we can follow up the arguments of a given author. There are authors who

have the faculty of regarding things objectively, and of stepping out of themselves, as it were, and regarding their own reasoning objectively. In other words, they scrutinize their own conceptions as narrowly as others scrutinize their perceptions. A great mistake is made in education to-day in not training this faculty. Its resulting defects are made manifest not only in ordinary but also in expert medical testimony, which is damaged by the influence of personal equation to an extent that very few had any idea of. It is natural to love one's own ideas, but there is a higher aim which develops on the basis of a scientific instead of a personal pride. This scientific pride is the best prophylactic against dishonest or strained expert testimony.

Dr. Hammond : Dr. Spitzka, it appears, has misunderstood me. I did not deny the existence of the moral sentiments, but I denied that they were inborn. A deficiency in a moral sense I look upon, in some sort, as an intellectual deficiency. No child is born with the knowledge that it is wrong to steal, and all children are born liars.

Dr. Spitzka : I think I understand Dr. Hammond correctly, and I intended by my remarks to oppose his idea that the moral sentiments are solely the result of training. They are in great part unconscious and instinctive. That children lie and steal is not an argument against this claim; the manifestations of a certain capacity of the mind may be obscure or absent, but that does not demonstrate the absence of the capacity.

Dr. Hammond : Dr. Spitzka is wrong about the Jukes family; it had not 75, but 750 members !

Dr. Wight (sarcastically) : I would like to thank Dr. Spitzka for his excellent Germano-Latin rendition of my Anglo-Saxon definition.

Dr. Spitzka : The definition may have a more rolling sound; as long as it accurately defines what it is intended to define, it fulfills its functions. All perceptions are imaginary, and hence to call a perception imaginary defines no illusional character.

Dr. Hammond : That is Berkeley's idea ?

Dr. Spitzka : Precisely; and Dr. Wight's definition does not meet the objection; but a perfect definition should be above cavil even of a quibbling nature.

A unanimous vote of thanks was thereupon passed for the excellent paper read by Dr. Wight, and the chairman then introduced Dr. Landon Carter Gray, of Brooklyn, who read the second

paper of the evening, entitled, "The Case of Maggie Keppel, the Brooklyn Child Abductor."¹

At the conclusion of the paper a vote of thanks was given to its author.

Dr. Spitzka remarked, that owing to the fact that the main points of a controversial character connected with the paper would probably come up for discussion when the announced paper of Mr. Eller on the new code was brought before them, but little could be said about Dr. L. C. Gray's paper beyond giving it a complete and general endorsement. He considered it a careful and scholarly review of a most interesting case. One point, however, deserved being brought out in bolder relief. Maggie Keppel, it seems, had been a "dead-beat;" had not paid her restaurant expenses; had used false names and made hypocritical advances to the child, and had lied and contradicted herself at every step. It will be recollected, in this connection, that the most mawkish and hollow oratorical effort made in behalf of the prosecution in the Guiteau trial was based on the fact that Guiteau had been a dead-beat, a swindler, contradicted himself on the stand, and—for the first, and it may be hoped for the last time, in the annals of civilized lands, that such a fact could be used against a prisoner on trial for his sanity and life—had had venereal disease.

There being no further discussion, miscellaneous business was declared in order. The reading of the by-laws was called for, and subsequently, by motion of the Society, they were referred back, for further consideration, to a joint committee composed of the original committee and the executive committee; and it was further moved, seconded and carried, that said joint committee report at the next regular meeting of the Society for the final adoption of the said by-laws.

Dr. Spitzka then moved that the order empowering the special committee to admit gentlemen against whom there were no objections as members to have the same privileges as those who originally joined the Society, be continued open until the next regular meeting. This motion being duly seconded, was put by the Chair and carried. The Society then adjourned.

Second Regular Meeting, February 8, 1883.

The second regular meeting of the N. Y. Society of Medical Jurisprudence was held on Thursday evening, February 8, 1883,

¹ See original department of this issue, p. 19.

at the Academy of Medicine, 12 W. 31st street, the Vice-President, Jarvis S. Wight, M. D., presiding.

After the minutes of the previous meeting had been read and adopted, the Special Committee on By-Laws handed in a report through their Chairman, Mr. Max F. Eller. He offered a draft of the By-Laws which differed from the previous draft in but few respects, the chief of which was the change of the Society's name to "Society of Medical Jurisprudence and State Medicine." This draft was recommended by the committee for adoption. It was decided, on motion, by a vote of the Society, that the articles and sections not objected to should stand adopted as read.

Mr. Delaney, after the reading of Article IV., § 3, suggested that where the words "notice in writing" are used, that it be the sense of the Society that the notice may be in printed form, the address to each member being in writing. It was thereupon moved by Dr. Spitzka that this suggestion be recorded by the Secretary in the minutes of the Society as the sense of the Society. This motion was seconded and then carried. After Article IV., § 6, was read, Dr. E. C. Harwood arose and stated that, inasmuch as the sum in the hands of the treasurer of a society was not a large one, banks often refused to open an account with a society, and for that reason suggested that the deposition of the money be allowed to him, and that the words "in a bank designated by the Board of Trustees" be omitted. Mr. Max F. Eller moved, as an amendment, that after the words "in a bank designated by the Board of Trustees" there be inserted "unless otherwise ordered by them." Seconded.

Dr. C. S. Wood suggested that the treasurer deposit the moneys in the treasurer's name.

Dr. E. C. Spitzka upheld the reading of the By-Law as amended by Mr. Eller. Dr. A. M. Jacobus thought it a matter which could be arranged between the treasurer and the Board of Trustees, and hence upheld Mr. Eller's amendment. Mr. A. J. Delaney stated that it was on account of the trust which the Board of Trustees had to assume when constituted the Board of Trustees of the Society, that in order to protect the treasurer they had to deposit the money in a bank of their own designation. Mr. Eller's amendment having then been put by the Chair, was carried.

It was moved by Dr. Jacobus that in Article V., § 1, the word "and" between the words "medical" and "chemical" be changed to

"or." Seconded and carried. It was next moved, seconded and carried that § 2 of Article XI. be stricken out, and that the numbers of the following sections be accordingly changed. After the reading of the By-Laws was completed it was moved that the By-Laws as a whole be adopted as read. This motion was duly seconded and carried without any discussion.

It was then moved by Dr. Spitzka that the Board of Trustees be instructed by the Society to incorporate within 15 days from date. Seconded and carried.

A motion was then made and seconded that 200 copies of the By-Laws be printed. Amended that a few copies be hectographed and seconded. Dr. Hammond suggested that procuring copies of the By-Laws could be obviated if the Secretary was instructed to have a copy of them at each meeting of the Society. The amendment alone was carried.

The Chairman then announced a donation to the Society of \$50 from Dr. Wm. A. Hammond. By a motion carried unanimously the Society's thanks were tendered to Dr. Hammond for his generous donation.

The paper of the evening was then read by Dr. Wm. A. Hammond:

A CASE OF INTELLECTUAL MONOMANIA WITH MENTAL DEPRESSION.

By WILLIAM A. HAMMOND, M. D.

Surgeon-General U. S. Army (retired list), Professor of Diseases of the Mind and Nervous System in the New York Post Graduate Medical School, etc.

This phase of mental disorder is not to be confounded with the emotional form of insanity known as lypemania or melancholia, with which, though entirely distinct, it has naturally many relations. It is the *monomanie triste* of Marcé, and, as this author has pointed out, is characterized by the fact that although the patient has fixed delusions of a melancholic character which influence him in his actions, he can nevertheless reason well in regard to other subjects, and is often able to conduct himself with entire propriety in all the relations of life outside of his own particular erroneous beliefs. In melancholia, on the other hand, the

emotions are involved to an extreme degree ; the false conceptions which exist often assume entire control of the mind and render the individual altogether incapable of the systematic performance of rational acts, whether they are or are not connected with his delusions.

Without at present going into a detailed description of Intellectual Monomania with Mental Depression, I desire to say a few words relative to what is sometimes one of its most striking manifestations, and that is, the condition known as the *delirium of persecution*. This has attracted the serious attention of alienists not only on account of its pathological relations, but of its importance to medico-legal science.

Generally, this state begins with illusions and hallucinations, which for a time may be strenuously resisted by the individual, but which usually eventually obtain a complete mastery over his reason. The sense of hearing is that which is generally the seat of these false perceptions, which appear either as vague uncertain sounds or isolated words, or as well-defined and entirely coherent sentences. They are in the form of threats, or warnings, or advice as to the best way of escaping from imaginary enemies or dangers. The sense of sight is not so frequently affected, though occasionally the patient sees a policeman or other persons in search of him in every one who looks at him a little closely. In order to escape from these imaginary enemies he makes complaint to the officials or seeks safety in flight, or may even proceed to the extent of perpetrating suicide or homicide. Sometimes the individual labors under the delusion that organized bodies of men have banded together for the purpose of destroying him or inflicting severe bodily injury upon him. These may, in his imagination, be the whole police force, or the clergy, or the medical profession, or the masonic fraternity, or the members of some one nationality. A patient of mine was sure that all the clergymen had entered into a conspiracy to "pray him into hell." He went to the churches of all religious denominations to hear what the preachers had to say about him, and discovered adroit allusions to himself and covert invocations to God for his eternal damnation, in the most harmless and platitudinous expressions. He wrote letters to various pastors of churches denouncing them for their uncharitable conduct towards him, and threatening them with bodily damage if they persisted in their efforts to secure the destruction of his soul.

Another was constantly dodging around the corners of the

streets and hiding himself in doorways to avoid detectives, for whom he mistook all who happened to look at him with more than a passing glance, and who he conceived were seeking to arrest him on the charge of attempting to take the life of the mayor. "I never even saw the mayor," he would exclaim with tears in his eyes, "and God knows I never wished him any harm, and yet these scoundrels are endeavoring to imprison me for shooting a pistol at him. There's another of them!" and instantly he darted down an area to hide till a bland-looking old gentleman whom he took for a disguised detective had passed. "That man," he continued as he emerged from his place of seclusion, "is the sharpest one of the whole lot. He looks seventy years old, but he's only twenty-five. His hair is a wig and his beard is false. I can go nowhere without just managing to escape. Of course he will catch me at last, and then I shall go to prison for life."

C. B.,¹ after separating from her husband and remaining absent six years, came to the United States from Ireland and there married again. Shortly afterwards a daughter by her first husband came over, and then the mother seemed to realize for the first time that she had two living husbands. This idea seemed to be the exciting cause of her insanity, which first showed itself in unfounded suspicions that her daughter was leading an improper life. Hallucinations of hearing next supervened, to the effect that people were talking about her night and day. She imagined she heard a young man say that she was a bad woman, had stolen bonds, committed forgeries, and was the mistress of a Mr. Welsh. Also heard him say that a play founded on her life was being performed at a theatre. She declared that people look crossly at her and point their fingers towards her. Was very positive about all she heard and saw, and said her opinion could not be changed if all the circumstances should be denied by the persons whom she thought had spoken about her and pointed at her. This patient remained in the asylum for several years in about the same condition as when she entered it.

Delusions of poisoning are very common with these people. A man from Brooklyn only a few days ago came to visit me, and having to wait his turn in the reception room, sent in a note to the effect that he had been poisoned by a man with whom he had

¹From Dr. Parsons' MSS. Notes of Cases in Blackwell's Island Asylum.

dined a short time since, and that he would not wait, as the poison was "working on him." I had treated this patient a year previously for similar delusions and he had entirely recovered and had resumed his business, that of a shop-keeper. Some time before I first saw him he had been an inmate of the Insane Asylum at Flatbush. I sent for him to come into my consulting room, and to quiet him till I could attend to him, poured out a dose of the fluid extract of coca and requested him to swallow it. He took the tumbler into his hand and looking at it for a moment, set it down hastily and rushed from the house, exclaiming, "You are as bad as the rest of them ; just as bad as the rest !" A few days afterward he visited my son, Dr. Græme M. Hammond, with a similar story of poisoning, but left hurriedly while preparations were being made to examine him.

It is not at all uncommon for the victims of delusions of persecution to imagine that they are being acted upon by some occult influence or by some one or more of the forces of nature, as heat, magnetism, or electricity. "Spells" are laid on them by certain individuals whom they know, or by invisible persons who only make themselves known by their speech. In one case that was under my charge the patient, a stationer doing business in this city, had the delusion that unknown enemies—free-masons—were acting on him by electricity, which they sent into his brain through the top of his head, by powerful batteries which they had in their lodge-rooms.

In another, a woman who kept a small shop in the Bowery, and who came to my clinique at the Bellevue Hospital Medical College for the purpose of getting relief, declared that all the iron railings and railway tracks had been charged with electricity in order to injure her, and that whenever she touched one of them, or even came near them, she received a severe shock. A case of a like character is cited by Semelaigne.¹

Very slight causes are sometimes sufficient in a patient suffering from intellectual monomania with depression to excite hallucinations which have been for some time absent. Poterin du Motel² cites the case of a woman who had become melancholic,

¹ "Du Diagnostic et du Traitement de la Melancholie." *Mémoires de l'Académie Impériale de Médecine*. Tome xxv., p. 235.

² "Études sur la Melancholie," etc. *Mémoires de l'Académie Impériale de Médecine*. Tome xxi., p. 462.

lost sleep, and had pains in the head and bleeding from the nose in consequence of some insignificant family disagreement. She contracted the delusion that her sisters, who were in reality devoted to her, had conspired to injure her. She also had illusions and hallucinations, saw a black head, and heard voices speaking against her. The mere opening or shutting of a door, a step on the floor, or the slightest sound, was sufficient to excite these hallucinations.

A somewhat similar case was at one time under my observation in which the patient, a lady thirty years old, whose mother had died insane and who was herself of a strongly-marked nervous temperament, suddenly became affected with hallucinations of hearing, by which she was told that her servants had entered into a conspiracy to burn the house and her with it. Although she never had any hallucination of seeing the persons from whom the voices were supposed to come, she was quite sure that they came from real individuals concealed in various parts of the house or under the steps of the houses she passed in the street. Night and day while awake she heard the voices. Finally, the continuity of the hallucinations ceased, but the delusion remained, and she was constantly watching her servants, frequently changing them, and invoking the aid of the police in order to insure her safety. But if at any time she heard a very loud noise, such as the rumbling of a heavy wagon in the street or the explosion of a blast, the hallucinations at once returned.

The foregoing description is perhaps sufficient to point out some of the chief features of intellectual monomania, with mental depression, so far as they are connected with the delusions of persecution which are often present. In the next plan I desire to present to the Society the history of a case of universal interest, in which such delusions existed.

On October 10th, of the present year, a man dressed in ragged and paint-soiled clothes walked with a quick, nervous and uncertain gait along the south side of Fourteenth street, between University place and Fifth avenue. His unkempt and disorderly appearance attracted attention, and as he hurried on, his head bent upon his chest and his eyes staring wildly from under a slouched hat at the passers-by, many avoided him, instinctively forming the idea that he was contemplating mischief.

The street was crowded, mostly with women, but the man pushed the people aside, at the same time muttering some unintelligible

words and assuming an angry expression. Suddenly he drew from the breast-pocket of his coat a pair of sharp-pointed compasses, such as are used by carpenters, and began to strike right and left at the people around him. In a few seconds he had struck and wounded three women who were near him. The rest scattered in all directions, the man pursuing some and striking at them with his murderous weapon. Three other women were wounded, and then the man was seized by several men, and a policeman coming up, he was disarmed and taken into custody. It was then ascertained that he was a Frenchman, named Ernest Dubourque. All the women recovered, except one, who died of secondary hemorrhage several days after the infliction of the wound.

When questioned relative to his reasons for his murderous conduct, he either gave unintelligible answers or refused to reply, alleging that he did not understand English. He frequently rubbed his head with his hand and complained of pain. It was then recollected that for several years past the man and his father had been perambulating Broadway carrying signs on their backs stating that they had been defrauded out of a large fortune by the United States government, and demanding the restitution of the money of which they alleged they had been robbed. The only ground for this conduct was the facts that a brother of the old man had some twenty years ago died in California, and it was supposed he had left a great deal of gold behind him. The father and son never, however, took any pains to ascertain the truth or falsity of the report, but contented themselves with charging the government with having appropriated their legacy to its own uses. During all this time they were regarded as harmless lunatics. Less than a year ago the old man died, and then the son was compelled to walk alone. Occasionally he did a little work as a painter, and appears to have suffered at times from lead colic. He continued to talk of his grievances and told improbable stories of his acquaintance with great men in France, and his intimacy with the nobility. A few months since, while painting a ship, he assaulted one of the workmen whom he accused of robbing him, and was, in consequence, sent to the prison on Blackwell's Island. On his release he declared that he had been incarcerated by the men who had stolen his inheritance. Subsequently he stabbed a policeman, was again arrested, but was, strange to say, discharged from custody and allowed to go at large on the ground of insanity. A few days after his attack on the people in Fourteenth street I

examined him at the Jefferson Market prison, in which he was confined. He kept his eyes fixed upon the floor, only raising them when I asked him some question, and then only for a moment. His expression was dull and stupid, his extremities cold, his pulse 65 and weak. His face was somewhat swollen, and his forehead was marked by the deep transverse lines so often seen in lunatics of his type. In answer to my inquiries, he said that he was 37 years old, and that he had frequent attacks of pain in the head and vertigo. At first, when I asked him why he had stabbed the women, he shrugged his shoulders and muttered something about their having been talking against him. He refused to tell what they had said, remarking that he did not understand English. When the question was put to him in French he shrugged his shoulders again, but said nothing. I told him that one of his victims would probably die (she died at just about that time, though I did not then know the fact), and that if she did it would probably go hard with him. To all of which he made no reply, but looked the picture of perfect indifference. He then wrote his name, "Ernest Dubourque," on a piece of paper, which I gave him for the purpose.

On other things than his crimes he talked glibly enough, both in French and English, but as soon as they were mentioned he shrugged his shoulders and said he did not understand. Finally he declared that he knew nothing about the matter, and did not know for what he was in prison.

My interview led me to the conclusion that Dubourque was a lunatic, and sufficiently shrewd to pretend ignorance of his conduct. At first his cunning was not so well marked, for he admitted that he had stabbed the women because they had been talking about him, but as I questioned him further his mind seemed to awaken, partially, to the idea that my inquiries were hostile to him, and that to answer them would get him into further trouble.

The clinical history of Dubourque, aside from his personal appearance and manners, is of such a character as to show that he is the subject of intellectual monomania with mental depression. His insanity, as well as that of his father, appears to have been developed by disappointment that they had not obtained a fortune by the death of the Californian relative. So strong was the idea—for which it appears there had never been the least foundation—that he was rich, that when he died they contracted the additional delusion that he had made a will in their favor; that the

will had been destroyed by the government, and that his property had been turned into the United States treasury. For several years Ernest Dubourque and his father had walked Broadway with placards on their backs, wishing by this means to make the world acquainted with their supposed wrongs. It was a clear case of the *folie à deux*, to which attention has within a recent period been so pointedly directed. The death of the old man appears to have aggravated Ernest's condition. He became aggressive, he quarreled with his fellow-workmen under the idea that they were attempting to cheat him, and stabbed a policeman for some fancied indignity. Finally he committed the numerous assaults resulting in one death, for which he is now in prison. Under the new code it is difficult to see how he can escape punishment for his crime. Under that code, in order to avoid responsibility, it must be shown that he was laboring under such a defect of reason as either not to know the nature and quality of the act he was committing, or not to know that it was wrong. Morbid impulse will not, therefore, longer be an excuse, nor will a delusion unless such delusion would, if true, justify the act. The most that Dubourque could urge in extenuation was that the women were "talking" about him. He certainly knew the nature and consequence of his acts, and knew that they were contrary to law. Undoubtedly, therefore, he ought to suffer punishment. And I would ask, in conclusion, whether or not the corporation that allows a lunatic to go at large when he has once been acquitted of a murderous assault on the ground of insanity, cannot be mulcted in damages for its open and flagrant disregard of the public safety. The disposition shown by juries to pronounce lunatics sane is doubtless the natural outgrowth of the asylum abuses, which are such a blot upon our national reputation. It might, however, have been expected that sheriff's juries, selected as they are presumed to be from a superior class of the community and endowed with intelligence above that of the common jury, would have been superior to the influence of such a factor. But experience shows that they are not; for within a few days past they have pronounced a man sane and competent to manage his business who is in the initial stage of general paralysis of the insane, and who is quite certain, unless soon restrained by force, to ruin his affairs and perpetrate some act of violence. Here the claims of the man to protection against himself and the still more imperative claims of his family were with that restricted vision

peculiar to narrow-minded persons, unheeded in presence of the more obvious fact that they were discharging an alleged insane person from an asylum. The alienists and neurologists who, after thorough examination, testified that the man was the subject of general paralysis of the insane and that he was hopelessly incurable, can well afford to let time act as the arbiter between them and ignorance. In the meantime the person, the family, and the property of the insane individual suffer till such time as his lunacy becomes so palpable that even sciolistic commissioners, so-called experts, and sheriff's juries can no longer doubt its existence. Even as these lines are being written the person in question, with maniacal triumph, has published an advertisement in the daily newspapers which is of itself sufficient evidence of his lunacy, and has otherwise conducted himself—for instance, pointing a pistol at, and threatening the life of a workman for some fancied slight—as to place the matter beyond the possibility of a doubt in the mind of any rational and unprejudiced person intelligent.

A vote of thanks was given to the author of the paper at its conclusion.

The discussion was opened by Mr. E. H. Benn, who spoke as follows :

MR. PRESIDENT—As one of the legal fraternity, I will first answer the inquiry made by Dr. Hammond, whether the city, as a municipal corporation, cannot be made liable for damage done by an insane man who is allowed to go at large after having been acquitted of crime, or of a charge of crime, on the ground of insanity?

It may be that the city ought, in such a case, to be liable, but there is now no law making the city or any city liable in such a case.

If a person charged with crime is acquitted on the trial on the ground that he is insane, it is a notice to the public, at least as far as that information extends, that he is an insane man; but the public may have that same knowledge, independent of that judicial determination, and in either case it is the duty of any citizen having that knowledge to take steps to have the lunatic arrested and confined and the public protected. And even if it is the duty of the officers of the city to act in such a case, still the city, as a

city, cannot be sued or held liable for damages because of their neglect or failure to discharge that duty.

Officers personally, for willfully and corruptly doing what is illegal, or omitting to do their duty, may be indicted and punished or removed from office, but the city cannot be indicted or sued in a civil action for damages in such a case. There are certain wrongful and negligent acts of officers of municipal corporations for which the city would be liable, but they are of a different kind and familiar to you all. There is no need of considering them in discussing this question. It is sufficient that for damage done by a lunatic on the streets or elsewhere after it is known that he is a lunatic, a city in which he resides is not liable.

It is the duty of policemen and other officers of a city to arrest and prosecute criminals, but if a man known to be a thief, or known to be guilty of stealing, is not arrested, or, if arrested and tried, is wrongfully acquitted and allowed again to run at large, by means of which he does further injury, the city certainly is not liable to be sued for it. Perhaps the city ought to be liable for injury done by an insane man who is allowed to go at large, but that is not material so far as an answer to this question is concerned. It is sufficient that such is not the law now, nor has it ever been, and it would require legislation to make a municipal corporation liable in such a case.

Intellectual monomania, the subject brought up for discussion this evening, and so ably presented in the paper read by Dr. Hammond, is a very interesting one, and is made important by the fact that we see cases similar to those mentioned so frequently in our intercourse with men in business, and in listening to what has been said upon the subject and to the remarkable manifestations as they have been described to us, I have thought it would be a proper subject of inquiry, here and elsewhere, whether it is safe for the many persons apparently harmless, but whom we know to be insane on some subjects at least, to go at large unrestrained. It is true that they are generally harmless, and sometimes it is difficult to say whether it is lunacy or eccentricity. The border line between sanity and insanity is sometimes but feebly defined, yet there are many cases where persons are unmistakably insane on some subjects, but sane or apparently sane on others, and are good business men, making contracts, buying, selling, cultivating and improving property.

I meet and have occasion to do business with such people very often.

About eight or nine years ago, a man who had invented and procured a patent for a valuable and useful implement, and who had made a contract with a Connecticut corporation for the manufacture and sale of the patented article, requested me to bring an action for him in the Supreme Court against the corporation for a breach of the contract, showing that he had a meritorious cause of action and was entitled to large damages. I brought the action, but soon discovered that it would be impossible to do anything with the suit or with him, because of his fear of the Free Masons. He told me confidentially that the whole Masonic fraternity, as far as the order extended, was engaged in a conspiracy to ruin him. That when the conspiracy against him was first organized he lived in a Western State, and he left that State and came East, but it made no difference, as the orders went out from the Grand Lodges, and they had spies and agents in every State, town and city, in the country especially, appointed to watch him, and report every movement of his and everything he said or did. and that while he was talking with me the spies were all around the building, and at the corners of the streets, and at or near the outside door of the building, and would know of his having been talking with me. He said he would not have his suit tried before any Judge who was a Free Mason, nor would he risk a jury if there was a Free Mason on it, and as officers of the Court might be Free Masons, and as the Judges, if not Free Masons, were certain to have friends who were, and whom he knew would influence or prejudice the Judge against him, he could not have his suit tried at all. I gave him the papers, consented to the substitution of another lawyer as attorney, and abandoned the case, glad to get rid of the suit and of him.

His case has been in the hands of several different lawyers since, none of whom have been able to do anything with him, or for him.

For several years after I gave up his case I did not see him at all, but a few weeks since he came back to me laboring under the same delusions, and begging me to take his case again, saying that he was satisfied that all the lawyers he had employed were Free Masons, although they pretended they were not, and I had great difficulty in getting rid of him again.

This man, according to his own account, has been laboring un-

der this delusion for more than twenty years, and although it has affected him injuriously in his business, he is or appears to be entirely harmless. What our duty to such lunatics is, or what duty citizens owe to the public in such cases, is, it seems to me, a very proper subject of inquiry and discussion here.

Other cases of apparently harmless lunacy, which have come under my observation, as they have under yours, I have no doubt, might be mentioned, but time will not admit of it now.

Mr. Geo. P. Avery : I hear that there will be a suit, and not knowing which "side" I will be called on would hesitate to give an opinion. If the city called me (ironically), I should undoubtedly hold that there was no responsibility; if the plaintiff called me, I might see good reasons for the opposite view [laughter]. It seems to me that it would be very important for physicians to determine what insane persons are dangerous and which ones not. I recollect a gentleman, an excellent business man, who while showing no observable mental disturbance in the *interim*, would become stark mad about the time of every Presidential election; would claim that he was elected and appoint his cabinet. On one occasion I was his Secretary of State [laughter]. But he seemed to be perfectly harmless, and at the expiration of the excited period, which would last about a month, he would go up on his roof and proclaim that he was the President of the United States to the whole world. Then he would come down and attend to his vocation.

Mr. S. B. Livingston : It does not seem to me that we can dispose of this question on the basis of the existing statute or common law, and I believe if a matter of this kind were to be made the subject of litigation that very interesting and novel questions of law would arise, questions to decide which there is no precedent. I am far from believing—as positively as has been stated—that there would be no grounds for action. On the contrary, I think that an action would hold with reasonable prospects of success, if properly conducted. Certainly there is every difference between the case of an insane murderer not generally or officially recognized as insane committing a crime, and of another whose dangerous disorder has been advertised as it were. The difference between preventable and unpreventable accidents in law is recognized in many ordinances and in common law, and I see no reason why analogous principles should not hold good here.

Mr. Max F. Eller: I incline to the view that the city could be held responsible for an injury done to any person in its streets by a lunatic who had been allowed to be at large in violation of law, after his unsoundness of mind and consequent irresponsibility had been made the basis for his acquittal or discharge from imprisonment for an alleged crime. If any corporate political body or municipality appoints or elects judges to administer laws and ordinances, these judges are its servants, and the corporate body is chargeable with the consequences of the negligence or willful disregard of law of such servants. Hence such body is liable in damages for injuries received from falls on icy sidewalks or into improperly protected excavations, or by falling awnings, etc., provided it has had actual or constructive notice. Now, in the case of Dubourque, the city certainly had had notice, and if the principle is sound its application in his case is as nearly perfect as can be. Dubourque, having been arrested for an assault and arraigned before a Police Justice, was acquitted of the charge on the ground of insanity, and was thereupon *allowed to go*. Was there ever a more monstrous mockery of legal procedure? Why should not the city suffer for the consequences of such a palpable and flagrant violation, by its servants, of the existing laws? Mr. Eller thought that it made no difference in this case whether the act was a judicial or purely ministerial one.

He next called attention to a very serious defect in our laws in regard to persons, who, after having been found not guilty of an otherwise admittedly criminal act on the ground of insanity, are sent to an insane asylum. These persons may be liberated from such asylum practically at the discretion and option of its superintendent, and without any of the safeguards which are supposed to be thrown around the accused or suspected individual for his protection and that of society. It takes a jury, a judge and experts to send such a person to an insane asylum, and it ought to require the same factors to release him. There should be at least the concurrent opinions of three disinterested experts before a discharge can become operative. As the law and practice now are, the kleptomaniac, pyromaniac, homicidal maniac, etc., may be liberated after a few years' confinement on the favorable opinion of an asylum superintendent, which may in many cases be accelerated by more or less substantial importunities of friends and relatives. To say the least, the system is vicious, and needs some reform.

Another important point, to which Mr. Eller wished to allude, was this : That in the recent wholesale delivery from one of our asylums there figured generally, if not always, a certain class of so-called experts on insanity whose inexpertness and incompetency had, in his opinion, been demonstrated over and over again even to the mind of the layman. There was no doubt that in the asylum named many persons were unjustly detained, but unfortunately the majority of the cases which had lately filled the columns of the press, were cases of indubitable insanity, which were bolstered up, on behalf of the lunatic seeking his liberty, by the same incompetent experts, whose ignorance had been so thoroughly and emphatically demonstrated in the Gosling case. These men and their vicious and pernicious influence should be exposed and held up to public scorn and ridicule so as to prevent them from injuring the cause of science and the welfare of society by their unscientific charlatanism.

Mr. J. B. Leavitt : With due deference to the gentlemen who have preceded me, it seems to me that the discussion has drifted away from the question put by Dr. Hammond. That question was whether, where a man on trial for a crime pleads insanity as a defence, and is acquitted on that ground, and the authorities allow him to go free when he should be sent to an insane asylum, and he thereafter commits another offence, can the city be held liable in damages? It would be the duty of any lawyer who should be consulted, no matter by what side, as to whether such a claim could be successfully maintained, to advise his client unhesitatingly that it could not. For two reasons: Such actions can only be maintained on the theory of negligence. Just as a physician makes a diagnosis of every one of his cases, so a lawyer must have a theory for every case of his. The theory on which such actions as the one suggested are maintained is that of negligence. The defendant must have been guilty of negligence. How could the city be said to be negligent because when the man was acquitted of insanity the Judge or other officer failed to have him sent to an insane asylum? Negligence could only be predicated in any event where there had been notice. Whom would you notify? The Mayor? The mere fact that the man has been tried and acquitted is not notice to anybody except the Judge, who is not an agent of the city. Again, municipal corporations are only held liable in damages on the ground that they are owners of property. They have two functions, governmental and as owners

of property. It is only under the latter function, where a city has through its duly appointed agents been guilty of a negligent action or omission in regard to its property, that it can be held liable for damages resulting therefrom. For example, it owns the streets. It is bound to keep the crossings free from ice. If it fails to have this done, and a person is injured, it is liable for the damage. But when you come to governmental duties, it is under no liability to pay damage for the failure of any of its officers to perform a duty of that class. The city cannot be held liable for a police officer making a false arrest, or for a police magistrate failing to do his duty. It could not be held liable for damages in the case under discussion. This is one of those questions on which there can be no question. Public policy would forbid holding the city liable for errors of officials in such matters. Bankruptcy of every municipal corporation would be the inevitable result.

Dr. Spitzka : I must say that I have felt delighted with the remarks of the last speaker which have tended to re-establish my faith in the legal profession—a faith which was rudely shaken by the remarks of some of his predecessors that they would serve on either side [laughter]. While the common and statute law may fail to cover the case put before us this evening, our belief of what should be the law seems to me, after all, the same, namely, that it should discriminate between the preventable and the unpreventable casualties. If a solid embankment is swept away by a storm of great violence, no one can be held responsible for the damage resulting. But if the embankment is notoriously weak, and attention is called to the fact, and the authorities entrusted with its maintenance neglect it, and allow it to go to ruin, and a storm then occurs, some one is responsible for so much of the results as might have been provided against with ordinary diligence. It seems to be the same with Dubourque. No one could be censured if he had done his bloody deeds without previous warning. But as it is, we cannot suppress the natural wish that some one should be held liable for this easily foreseen occurrence. Perhaps the *dementi* it gives to jury verdicts may lead the community to pay a little more heed to genuine experts. A true expert would undoubtedly have cautioned a jury that this man was dangerous and incurably insane. It is the community at large that has punished itself. It is our rotten political system, with its outgrowing abuses in our asylum management, and the devel-

opment of false experts, all the indirect results of popular ignorance and civic indifference, that are responsible for Dubourque's crime.

And now, in returning to Dr. Hammond's paper, I may say that I regret to differ so radically and severely from an esteemed authority like Dr. Hammond, as to say that I consider his remarks about responsibility not only extravagant but actually unreasonable. I understand him to say that Dubourque was responsible under the code, which makes the test of responsibility the knowledge of right and wrong with reference to the particular act done. If Dubourque was punishable at all, then, he was punishable to the full extent of the law and should have been hung. Do I understand Dr. Hammond to mean this?

Dr. Hammond: Certainly!

Dr. Spitzka: Dr. Hammond knows as well as any one in this room does, and all the classic writers on insanity he has so elaborately quoted would uphold and have upheld this, that a lunatic committing an act under the influence of hallucinatory delirium has his intelligence and his knowledge of "right and wrong" completely overwhelmed for the time. He is, therefore, not responsible. I was engaged by the District Attorney to examine Dubourque on behalf of the people, and made three thorough examinations of him. His knowledge of the English language is so limited that I was compelled to converse with him in his native tongue. I believe that Dr. Hammond will agree with me that the countenance of Dubourque was alone an indication and a genuine one of his mental disorder?

Dr. Hammond: Yes!

Dr. Spitzka: Dubourque was also undoubtedly shamming.

Dr. Hammond: Yes!

Dr. Spitzka: It is a common observation with the insane of this group that they may feign forgetfulness of a crime, and rare instances are on record where the insane have feigned a form of insanity foreign to their case for a particular purpose, being all the while unaware of the existence of their real disorder. On examining Dubourque I noticed a protrusion of one of his pockets, and induced him to present me with the contents. These were old pieces of wrapping paper covered with delusional writings, and worthless bits of string and tinfoil. The writings showed that the prisoner expected kind-hearted people to club together, send him to France, and to give him an education; while, on the other

hand, his real object was to colonize South America and to destroy malarial fever, which he believed was a divine dispensation. At the trial, with another physician and member of this Society, I testified on behalf of the defence, and the jury, after a half minute's deliberation, pronounced Dubourque not guilty on the ground of insanity.

Dr. Hammond: What was done with him?

Dr. Spitzka: He was instantly committed to the Utica Asylum.

Dr. Hammond: How long will they keep him there?

Dr. Spitzka: They are capable of pronouncing him sane and saying that he was never anything else as soon as they hear that I said the contrary [laughter]. I know the spirit animating those people, and have more than once experienced and witnessed the length to which their feelings and curious policy will carry them. We may congratulate ourselves on the fact that we have a District Attorney who, unlike his predecessors—I do not speak of his immediate predecessor—does not cherish the ambition of hanging people, sane or insane, to make a good “hanging record.” He has some at least of the prisoners whose sanity is questioned examined by his own experts, and is guided by their decision. Dr. Hammond complains about the Henry Prouse Cooper case. While I agree with him in his diagnosis and in his strictures on juries generally, I must remind him that in this case it was not to be wondered at that the jury were confused and doubtful. While there was an authority or two on the stand, yet the influence of their testimony was negated by the fact that the counsel for the family saw fit to call as witnesses one man who had, on his own admissions, been convicted of confining sane persons in his asylum whose mental state he had not examined for months and years, and another who had plagiarized Dr. Hammond's book.

Dr. Hammond: While that is true enough, those facts were not brought out on the trial!

Dr. Spitzka: The wrongful asylum incarcerations were known to every reader of the daily papers in the city of New York. And while of the dozen and more patients discharged from Ward's Island, at least a half were insane, and one of them even dangerously so; and while I agree with Mr. Eller in denouncing the meretricious and unexpert medical testimony that has led to the liberation of such subjects, yet the fact cannot be denied that acutely insane patients were retained months and years after recovery, and one of them—a newspaper correspondent—was locked

up in a cell for threatening to communicate certain asylum abuses to the press. Such facts have their influence on the minds of juries, and should caution lawyers how they employ professional experts who have developed a systematic propaganda, who have their little expert cliques, and who can be calculated on to testify for the sake of money or popularity, or both, without any reference to what science teaches to be true and right. A case of almost criminally indictable "expert" testimony was one probably referred to by Mr. Eller, where the "expert," having denied that the patient claiming his liberty had delusions, but the patient announcing his delusions on the stand, took the stand himself once more, corrected his testimony, admitted that the patient had the delusion—the dangerously insane one, that certain persons were driving compressed air into his system—and concluded by swearing that this was no sign of insanity.

Mr. S. B. Livingston: I must say that I agree with Dr. Spitzka as to his views concerning responsibility, but I do not think that the legal officer referred to, however morally right he might be in making the prosecution of a lunatic a matter of form, and in ignoring the provisions of a narrow code, had the legal right to do so. It was his duty to follow out the directions of the code, without regard to his private belief.

Dr. Spitzka: If Mr. Livingston will allow me to interrupt him for one moment—I may not have been clear on that point. The irresponsibility of Dubourque was determined on the basis of the code, and the questions asked me by both defence and prosecution were limited to its provisions and to the prospects of the prisoner as to inability, so that the law was minutely followed.

Mr. S. B. Livingston: Then I misunderstood the speaker. As to the views announced by Mr. Leavitt, I do not think that the principle he urges would accurately fit this case.

Mr. Lindabury: I must differ from the gentleman. Judges make erroneous decisions every day, and no one dreams of holding the community that elects them liable.

Mr. Livingston: True enough, though gross violation of duty might lead to the impeachment of judicial officers, and a certain amount of responsibility exists in this sense. But here is a question of injury to life or limb. A community is supposed to provide against preventable dangers, and where there is a clear duty violated, as in this instance, it seems desirable to locate the

responsibility somewhere, not as grounds for a speculative action, but to teach a wholesome lesson.

The discussion concluded with a rather colloquial exchange of views as to the duties of police and other magistrates in such cases as Dubourque's. At its close, there being no new or unfinished business, the Society adjourned.

REVIEW DEPARTMENT.

1. *UNTERSUCHUNGEN ZUR ELECTRO-THERAPIE DES RÜCKEN-MARKS.* (Investigations in the Electro-Therapy of the Spinal Cord.) By Dr. L. LOEWENFELD. Munich, 1883.
2. *A PRACTICAL TREATISE ON ELECTRO-DIAGNOSIS IN DISEASES OF THE NERVOUS SYSTEM.* By A. HUGHES BENNETT, M. D. New York, 1882.

These are both useful treatises, each in its own way. It may be said, too, that each is characteristic of the medical method of thought of the country to which its author belongs. Dr. Loewenfeld busies himself with all the minutiae of the scientific aspect of the question. Dr. Bennett busies himself with all the minutiae of the artistic side of the question. Dr. Loewenfeld has gathered together all the investigations touching upon the action of electricity on the functions of the spinal cord in animals and man, and thence deduces therapeutic principles which are to be recommended in the treatment of human disease. Dr. Bennett has gathered together the facts in regard to the action of electricity upon disease of the human nervous system; and, as elucidative of this phase of the matter, has tersely alluded to investigations as to the effect of electricity upon the spinal functions in animals and man. Dr. Loewenfeld takes the broader view, and relatively slights the claim of the suffering human being. Dr. Bennett takes the narrower view, and relatively slights the knowledge that has no immediate bearing. Both are types. In the one, we can picture to ourselves the academe, living in academic circles where learning, like a spectacled Psyche, is worshiped for learning's sake, where rewards are academic, and wherein the cure of individual patients is regarded as of secondary importance. In the other we can picture to ourselves the man of the world, aloof from academies, living in a community

where success depends upon the cure of individual human beings, or, at least, upon the happy spread of a delusion that such a cure is being effected. Both are useful to the profession. Which is the most useful, our readers will determine for themselves according to their own tastes, necessities, and the communities in which they live. A fact apparently without human bearings may go sullenly along for centuries, until accident or genius, or both, reveal an infinite humanward potentiality mute within it. When Galvani first saw the quiver of the frog's legs, as it lay upon the iron plate, how little could he, even in the wildest dream of a mania-struck enthusiast, have imagined that seemingly petty fact blossoming into the telephone and the electric light! At the same time, a fact whose humanward bearing is immediately evident, must have the greatest value in all countries where the individual human being is held in the highest consideration; in other words, the so-called "practical" writer will be most read and best appreciated wherever individual liberty and enterprise have been so diffused as to lead to the greatest individual dignity.

The contents of Dr. Loewenfeld's brochure are indicated by the headings to his different chapters, which are as follows:

1. As to whether the Spinal Cord can be reached by electrical currents.
2. Investigations in regard to the Direct Electrical Excitability of the Spinal Cord.
3. Investigations in regard to the Action of the Constant Current upon the Spinal Reflexes.
4. Investigations in regard to the Action of the Constant Current and Peripheral Faradic Irritation upon the Spinal Circulation.
5. Effect of Therapeutic Galvanization of the Back.
6. Conclusions from the foregoing Investigations.
7. The Therapeutic Effect of the Faradic Brush in Spinal Diseases.

Bibliography.

These chapters contain a full account of the particular aspect of the subject with which they deal, except, perhaps, those upon the therapeutic applications, which are rather weak and smack of the closet rather than of the clinic. But they are intended only to be digests, and contain nothing new.

The captions to the chapters in Dr. Bennett's work will equally well convey an idea of the matter within:

1. The Apparatus necessary for Electro-Diagnosis.
2. Anatomical Knowledge necessary for Electro-Diagnosis;
by which is meant a knowledge of the motor points.
3. Methods of Applying Electricity in Diagnosis.
4. Electrical Reactions in Health.
5. Experimental Researches.
 - A. Anatomical Changes Resulting from Injury to Nervous Tissue.
 - Spinal Cord.
 - Motor Nerve.
 - Voluntary Muscle.
 - B. Electrical Reactions after Injury to Nervous Tissues.
 - Spinal Cord.
 - Motor Nerve.
 - Voluntary Muscle.
6. Electrical Reactions in Disease.
7. Electrical Reactions in Special Paralyses, Illustrated by Cases.

Chap. I., on electrical apparatus, we cannot commend. It is incomplete in detail, and constitutes no guide to the novice, except in a very general way, of his needs and the means wherewith to supply them. For example, in speaking of electrodes, the author only mentions three: the flat-plated one, the olive-pointed one, and the combined one of his own invention, and leaves the student in entire ignorance of the twenty or more different forms which can be found in any instrument maker's catalogue. Again, nothing is explained about the rheostat and the galvanometer, or the method of using them so as to intercalate resistances and measure current strength or internal or external resistance, or how to do any of the many things for which they are indispensable. On p. 11, too, is what seems to us a very faulty statement. It runs thus: "Taking the Leclanché cell as an example, a battery of these has been found to be sufficiently constant for all practical purposes; and as to durability, it will last in good condition, with moderate use, for several years, and without requiring any repairs whatever." The use must be very moderate, indeed, if our experience on this side of the water can be trusted; and we should certainly regard as an electrical curiosity a Leclanché battery that, being in fair use, would run over a year without requiring new plates in many cells. The other chapters are good, especially those upon the electrical reactions in health and dis-

ease, which will well repay a perusal by all medical electricians ; and the illustrative cases at the end of the book are excellently chosen, and constitute a clinical course that would be instructive to the best informed. And, therefore, late as we are in our review of the book, which we have been unable to consider at an earlier date, we have thought it too valuable, in spite of the defects mentioned, to pass it by in silence.

ERRATA.

Page 134, lines 20 and 21—For “Cayenne pepper, like crystals of uric acid,” read “Cayenne pepper-like crystals of uric acid.”

Page 135, line 7—For “arms” read “anus.”

Page 136, line 2—The word “present” should have no quotation marks.

Page 136, line 6—For “uvular” read “malar.”

Page 139, line 25—For “There are no surface tendencies,” read “There is no surface tenderness.”

Page 140, line 3—Quotation marks should be dropped before “empt.”

Page 140, line 10—After “constant” should be a semi-colon.

Page 140, line 14—For “stimulating” read “simulating.”

Page 141, line 16—For “flickering contractions of muscular fibres,” read “fibrillary contractions of the muscles.”

Page 141, line 25—For “Sandamore” read “Scudamore.”

Page 143, line 13—For “funniness” read “fuzziness.”



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EDITORIAL NOTES AND COMMENTS.

LITHÆMIA.

There exist few pathological conditions which have the importance that lithæmia occupies, both to the general practitioner and to the neurologist. Most of the cases referred to the latter as cases of "cerebral softening," "congestion of the brain," "cerebral exhaustion," "trouble at the base of the brain," "nervous depression," "congestion, hyperæmia or anæmia of the spinal cord," "spinal meningitis," "neurasthenia," "nervous derangements due to chronic malarial poisoning," become resolved into cases of simple lithæmia. The importance of this condition has, we think, been very much overlooked. The text-books on "Practical Medicine" scarcely refer to it, and the physician is brought to an appreciation of its significance often only after years of experience.

The diagnosis of this condition is to be derived from the consideration of many signs and symptoms, and as the nervous symptoms are those upon which we shall especially dwell, we shall consider first the other signs and symptoms. Some assistance is derived from the study of the causes of lithæmia. This condition is common in the descendants of parents who have had gout or dyspepsia, or Bright's disease, or chronic bronchitis; is of frequent occurrence in those leading sedentary lives; in persons engaged in severe and constant mental exertion—professional work; in large eaters; and we think that it is very common in those who eat largely at long intervals, a practice common to residents of cities

engaged in "down town" business, who partake of a large breakfast and in the evening of an enormous dinner.¹ It is also induced by living in an impure atmosphere; by the use of malt liquors and sweet wines; by the immoderate use of spirits without exercise, and very probably one great cause of the frequency of this condition is the excessive use of farinaceous and saccharine articles of food in the dietary of the people of this country. It is more common in men than in women. It is very often associated with hysteria in women, and is often present at the menopause. In suppression of the menses and in irregularities of menstruation it is also often met with.

The urine of the patient affords most valuable indications of this state. It is usually high colored, acid, often effervesces more or less on addition of nitric acid; the specific gravity is, as a rule, high; the morning specimen, by a reliable urinometer, is usually 1028 to 1034; sometimes the specific gravity of the entire amount passed in the 24 hours will be 1030. The quantity of urine may be increased, may be of the normal amount, and may be diminished. Cayenne pepper, like crystals of uric acid, are often observed by the naked eye attached to the sides of the vessel which contains the urine, also deposits of the urates are frequently present. Microscopic examination reveals halbert, lozenge and rhombic-shaped crystals of uric acid, and often octahedral crystals of oxalate of lime, amorphous urates and globular crystals of urate of soda with spicules. Albumen and sugar are occasionally found, but only for a short time, as a rule. Usually it will be found very difficult to reduce the specific gravity of the urine by diluents and diuretics. The acidity

¹ Senator, in a recent paper before the Berlin Medical Society, Berlin, Klin. Wochen. Dec. 4th, 1882, states that in albuminuria it is better to take small quantities of food at short intervals, than large quantities at longer intervals. We have for several years recognized the effect such a mode of living has in producing and increasing the deposits of uric acid, urates and oxalates in the urine.

of the urine is very marked, and is neutralized with difficulty unless alkalies are administered after meals, as has been suggested by Ralfe.¹

Patients in this condition usually suffer more or less with post-nasal, pharyngeal, bronchial, gastric or intestinal catarrh. Constipation and hemorrhoids are of common occurrence. Itching about the arms, and eczema there and elsewhere, are frequent.

The pulse often is that of high tension, and we may say is so, as a rule. The small pulse found in cases in which cold extremities and chilly feelings are features, will, on careful examination, be found to present high tension. The arteries early undergo the changes peculiar to endarteritis chronica. A feeling of oppression about the præcordia, often with slight dyspnœa, oftentimes an inability to lie on the left side, palpitation of the heart, intermittent or irregular pulse, unpleasant throbbing of the arteries of the neck and face or the abdominal aorta, especially after meals, are symptoms often encountered. A bitter taste usually on awakening in the morning is often complained of. The tongue is frequently coated at the back part with a yellowish-brownish fur. Small ulcers on the roof of the mouth are sometimes present. Sir James Paget has described a peculiar appearance of the throat encountered in the gouty or lithæmic. The pillars of the fauces, especially the posterior pair, the velum and the uvula are very red and glazed, and appear as if freshly painted over with glycerine. The uvula is sometimes much enlarged and even œdematous.

Dyce Duckworth² mentions a minor trouble which we have observed quite often, a painful follicular inflammation in the alæ of the nose. The same writer calls attention to

¹ On the morbid conditions of the urine dependent upon derangements of nutrition, by Charles Ralfe, M. D., London. J. and A. Churchill, 1882.

² St. Bartholomew's Hospital Reports, vol. xv, 1879, p. 107.

a condition of the nails sometimes observed in persons having lithæmia. The nails become brittle and "present" linear markings in their long axes.

A tendency to "baldness" is common, and the hair early becomes gray. The small blood-vessels of the skin over the uvular prominences and about the nose become enlarged, while the countenance is often sallow. The surface of the posterior part of the neck has often a red, sun-burned appearance, especially in individuals who have indulged in spirits. One fact which merits the position of a symptom in most cases of lithæmia, despite the woeful account the patient gives, is the most excellent appetite present.

We now proceed to the consideration of the nervous symptoms of lithæmia, and we shall draw largely upon the admirable paper of Da Costa upon this same subject.¹ One of the most striking symptoms is vertigo. Dr. Da Costa is very positive in his description of this symptom. He states that it is astonishing how many cases of vertigo prove to be caused by this condition, and he describes it as follows:

"It is a giddiness frequently repeated; often there are
"several attacks daily for a few days, and then there is
"a much longer interval; it may occur at night. It happens
"inexpectant of exertion, although long continued fatigue,
"especially in reading and writing, excites it; so does
"mental worry. But anything that aggravates or induces
"the lithæmic state develops it most promptly. * * *
"The vertigo is objective, not subjective—objects seem to
"whirl around the observer, not he himself to move. The
"giddiness is not associated with loss of consciousness, or
"this is so temporary that the patient is able to retain his
"position or readily to regain it. Still he has to hold on for
"support to surrounding objects, and I have known him

¹ The Nervous Symptoms of Lithæmia, by J. M. Da Costa, M. D., pp. 314-330. The American Journal of Medical Sciences, October, 1881.

"brought down on his knee before it is over. * * *

" Notwithstanding the exaggerated statements made by the
" sufferer, to whom the seizure seems terribly long, it is safe
" to say that it rarely lasts more than a minute or two, and
" frequently less than a minute. It may come on without
" warning or be preceded by a sense of emptiness of the
" head, by specks floating before the eyes, and by dimness of
" sight. When it has set in, sudden change of position is apt
" for the next few days to develop it at once, although, per-
" haps, this is not more marked than in any form of vertigo.
" It may or may not be followed by headache; generally it
" is surely followed by a sense of discomfort in the head, or
" by a dull ache of short duration, and it may be noticed
" that when the headache in lithæmia becomes a marked
" symptom, the vertigo is infrequent.

" When often repeated it produces effects on the special
" senses. Sight is less acute, the field of vision limited in
" size; letters look blurred, and there may be inability to see
" more than two or three letters in a word, or double vision
" may occur. One eye or part of one eye may be tempo-
" rarily blind, and the ophthalmoscope detects marked con-
" gestion, especially fullness of the veins. When no attack
" has happened for some time the eye ground is found to
" be normal. Long continued and frequently repeated at-
" tacks may give rise to some persistent changes, though
" never to the choking of the disk. It would be unfair to
" leave the impression that these changes are all the result
" of the vertiginous seizures. In part at least they belong to
" the lithæmic state itself, and may be caused by it. * *

" The sense of hearing is sometimes impaired for a day or
" two, and buzzing in the ears is complained of. These
" phenomena, too, may follow attacks of vertigo, or occur
" when the patient is only markedly lithæmic, and has not
" been dizzy.

“ I have in the cases described alluded to the momentary
“ suspensions of consciousness, the sensations of lightness
“ in the head, with a dark shade passing over the eyes,
“ which are, in my experience, very common, and are dreaded
“ by physicians especially, when afflicted with the disorder,
“ as the precursors of epilepsy. The sense of terror and of
“ fear occasioned is quite inconceivable to one who has not
“ heard these attacks spoken of by a victim. They happen
“ in those who at other times have had distinct vertigo;
“ they are not at the time combined with giddiness, but pro-
“ duce a staggering or swaying, from which recovery is so
“ quick that the disturbance mostly passes unperceived.
“ Again, uncertainty of gait may take place for a long period
“ without any of these signs of brain disturbance. In case
“ ——— it lasted for a year after the vertigo had ceased.

“ As regards the cause of the vertigo it is likely that the
“ disorder is produced by the impure lithæmic blood. Whether
“ this acts on the vaso-motor nerves and through them on
“ the cerebral circulation, or primarily on some nerve-centre,
“ must remain for the present a matter of pure speculation.
“ It would not be difficult, following the ingenious reasoning
“ of Woakes, concerning gastric vertigo, to connect the dis-
“ turbances through the pneumogastric nerve and the lower
“ cervical ganglion with the vertebral artery supplying the
“ labyrinth and adjacent structures. But we must assume
“ as certain that a disturbance of this is always the cause of
“ giddiness, and that the lithæmic process is invariably con-
“ nected with a fault in the liver.

“ Gastric vertigo has just been mentioned, and doubtless
“ it will be thought that the symptoms described are those
“ of gastric vertigo. So they are in many respects, except
“ that, for the most part, there are no gastric symptoms, or
“ but passing gastric symptoms in lithæmic vertigo, while
“ the evidences of the lithæmic state are marked features, or

"soon become so. Indeed, the error has been the other way; lithæmic vertigo has been confusedly included with gastric vertigo, from which we must learn to separate it. This is best done, as just indicated, by dwelling on the comparative absence of stomach symptoms and on the evidence presented of lithæmia. But there are unquestionably mixed cases which it is not easy to analyze."

We have quoted at length Dr. Da Costa's remarks on lithæmic vertigo, because of the importance of vertigo as a symptom, and by reason of the frequent association of lithæmia with certain diseases in which vertigo is a symptom of importance. The affections referred to are gastric catarrh, Bright's disease, hysteria, epilepsy, disseminated sclerosis, Grave's disease, simple anæmia, essential or pernicious anæmia, pseudo-leukæmia, leukæmia. The vertigo occurring in labyrinthine trouble and that accompanying eye strain (a remarkable case of this is to be found in Transactions of the Clinical Society of London, vol. viii., p. 12, 1875, reported by Dr. Brudenell Carter, in which a cerebral tumor was supposed to be present), is probably only accidentally associated with lithæmia when this condition is present.

Headache is a frequent symptom. It may be frontal, parietal or occipital, and often is seated in the vertex. The headache is often very severe, and made much worse by movement or sudden jars. There are no surface tendencies. The headaches are accompanied or followed by heavy deposits of "brick dust." The headache is sometimes present only in the morning for a short time, and then is usually frontal. This occurs particularly in people who consider themselves bilious¹.

¹ Bilious and biliousness are words in use by the laity which signify a condition of lithæmia. Notwithstanding the ridicule once directed against the expressions, they are still used and now have a certain significance.

Neuralgia is very commonly present. Da Costa states that "there is no nerve in the body that can ache that is ex-empt." Neuralgia of the brachial plexus, of the intercostal and sciatic nerves, is especially common. The sciatica in lithæmia is said to be often double, or shifting from side to side. Neuralgia of the fifth nerve, according to Da Costa, is by no means common.

Pains, which cannot be considered as purely and typically neuralgic, occur very often in lithæmia and in various situations. We summarize the most constant pain in the eye-balls, burning pain in the tongue, often confined to one side, disappearing for a few days and then returning; pleurodynia; mastodynia; often aching pains throughout the muscles of trunk and extremities, pain in stomach, stimulating gastralgia; dull aching pain in the ensiform cartilage¹. Other seats of pain are most frequently the insertion of the deltoid muscles and inner aspect of the arm and in the interscapular region; lumbar pain, often only present on awakening in the morning and then disappearing a few hours after rising; a dragging sensation along the course of the ureters; pain in the middle of crest of ilium and over ascending or descending colon, especially when the urine contains large quantity of cayenne pepper, crystals of uric acid; "aching and boring pains," particularly in the adductors of the thigh and gastrocnemii²; also wandering pains (care must be taken not to mistake these for the fulgurating pains of locomotor ataxia), "pain in the dorsum of the foot, simulating neuralgia of the anterior tibial nerve; pain in a somewhat diffuse manner about the hip and back of the thigh, simulating sciatica³;" pain in the tendo-Achilles, a deep-seated pain

¹ Dyce Duckworth, St. Bartholomew's Hospital Reports, vol. xv., p. 104. Studies of Some Irregular Manifestations of Gout.

² Dyce Duckworth, loc. cit.

³ Anstie on Neuralgia.

in the heel often as if a foreign body was implanted there such as a bullet, or as if the fold of a stocking was under the heel ; pain in the fingers, in the feet without affection of the joints ; coccydynia ; attacks of renal colic ; occasionally very severe nocturnal priapism without erotic sensations occur.

"Cramps in the legs and muscular twitchings are often met with in those suffering from lithæmia. The former are apt to come on at night, and are very annoying and painful. They particularly affect the gastrocnemii muscles, and occur much more often in winter than in summer. In one of my patients cramp under the inner surface of the instep is as frequent as in the calf muscles ; in another muscular twitchings of the face are also produced when the lithæmic state is marked. Irregular choreic movements I have also seen in children."¹ Dyce Duckworth² has observed flickering contractions of muscular fibres in various parts, such as occur in progressive muscular atrophy, and this has been noted by others. Dyce Duckworth³ states that "Buz-zard gives particulars of a case in a gouty man in which undue electrical excitability of the median nerve was found, the symptoms being difficulty of writing and spasm of the hand. Recovery followed anti-gouty medication." Grinding of the teeth is a common symptom, both in children and in adults, in marked lithæmia ; starting, jumping when just falling to sleep, Sandamore states, is most common in the lithæmic. Arterial spasm is sometimes met with ; and the only case of "digiti mortui" that we have ever observed occurred in a patient with lithæmia.

Local weakness of muscles, "a want of co-ordination of movement of the limbs, both upper and lower, giving

¹ Da Costa, loc. cit.

² Loc. cit., p. 107.

³ On Unequivocal Gouty Disease, p. 207. St. Bartholomew's Hospital Reports, vol. xvi.

"an awkwardness of movement—an ataxic gait," has been recorded by J. Russell Reynolds.¹ Dr. Buzzard² records a case of apparent infantile paralysis in a female infant one year of age. "The story told was, in fact, exactly the story of "infantile paralysis. When she was stripped, she appeared "a well-nourished, healthy-looking child. She did not move "the right lower limb, but looked at it as if in some distress, "and appeared to guard it with her hand. I examined it "first to ascertain if there were any signs of injury, but found "none. It was evident that pressure was painful, but nothing "could be found in the limb to account for this symptom. "The powerlessness was in striking contrast to the free movements of the left leg. * * * The investigation of the "child's general health threw light upon the case. The "urine was found to deposit a very large quantity of uric acid, and the explanation of this appeared to be that it "was being nourished upon a milk food which contained an "enormous amount of sugar. A few doses of citrate of "potash and a purgative completely cured the child, who "in a day or two was as strong as ever on this limb. What "happens in such a case I believe to be this: Minute crystals "of uric acid get deposited in the loose connective tissue "which intervenes between large muscles, and enables them "to glide over each other, especially at the back of the thigh, "and in the loins. These collections of connective tissue "have been shown to be lymphatic spaces, and in these the "uric acid sets up some subacute inflammation, which not "only causes pain and tenderness, but renders the muscles "powerless for the time being. Such a cause, I think there "can be little doubt, frequently obtains in those cases of "lumbago and so-called sciatica, which are rapidly cured

¹ *British Medical Journal*, December 15th, 1877, p. 842.

² *Clinical Lectures on Diseases of the Nervous System*, Philadelphia, 1882, pp. 69 and 70.

"by full purging and alkalies, with iodide of potassium. I am indebted to Dr. Burdon-Sanderson for originally suggesting "this point to me for observation."

Anæsthesia occurs in lithæmia, but is not a common symptom. Da Costa states that he has never found it very extended, but generally localized to an extremity or to a part of it, or corresponding parts of the extremities. It may affect face, and those who have a very severe headache with this symptom say that the anæsthesia is on the side opposite to the headache.

Paræsthesia, or perverted sensations, are of very common occurrence in lithæmia. Very often patients complain of a "funniness," or "whizzing" sensation on the vertex of head, with a feeling of weight or heat or of something moving there, or of a sensation of opening or shutting of the cranium. Likewise often they complain of hot "flushes" localized to some part of the body in general; of great heat in the palms of the hands and soles of the feet.

"One of the most singular abnormal sensations is that of "great fullness or rather pleasant warmth in an entire leg from "the knee down, and not accompanied by any sense of burning of the skin" (Da Costa).

Many complain of numbness, "tingling," "creeping," "deadness," or coldness in some part of the body.

These sensations may be circumscribed, or may have a paralytic or hemiplegic distribution, and usually are of a transient duration. Basham has noticed in many cases of pyelitis a cold or hot dead sensation in distribution of the external cutaneous nerve of the thigh. A very annoying symptom is extreme pruritus. Tinnitus aurium is sometimes very marked. Deafness is a not infrequent symptom.

Spells of languor and lassitude and a sensation of great weariness often occur, the latter especially after meals and usually after very hearty repasts. Depression of spirits is

frequent, amounting in some cases to melancholia. Great irritability of temper is often met with. Restlessness is at times a marked feature. Lithæmia is also one of the most common causes of insomnia. In the early stages the patient has simply the insomnia and apparently is none the worse for it, but in time it affects him in mind and body. A frequent complaint of lithæmics is the loss of memory and power of attention, and whether this is always actually the case or not it is difficult to state. All of the nervous symptoms become aggravated from the increasing introspection in which they indulge. Hypochondriasis is almost invariably associated with this condition.

From numerous observations, we feel prepared to state that hysteria is especially apt to develop in the lithæmic, likewise that many of the symptoms and frequently all that appear at the "change of life" will be found to depend upon a condition of lithæmia.¹

Our limits scarcely permit of the extended consideration which the latter part of our subject demands, namely, the influence of the lithæmic condition upon certain neuroses. We have observed this, especially in cases of disseminated sclerosis, epilepsy, tumors of the brain, hysteria, general paresis and melancholia.

In three cases of disseminated sclerosis in which the patients suffered much from lithæmia, the symptoms of the sclerosis entirely disappeared in two, and were much alleviated in one, by the treatment of the lithæmic condition. In the first two, as long as they live in the open air, are careful in diet and make use of an occasional chologogue, they remain free from symptoms; return to town, however, and a renewal of city life brings back tremor, restlessness and dif-

¹ We shall consider the relations of lithæmia to menstruation in a future communication.

ficult articulation. In epilepsy, when occurring in the lithæmic, as it so often does, the improvement is sometimes marvelous after the use of means to increase oxidation. The improvement is especially visible in the number of attacks of petit mal. The attacks of grand mal are likewise greatly diminished by suitable treatment. This statement is easily proved by continuing the same or smaller doses of the bromides and instituting measures to correct the lithæmia, when the attacks will diminish in frequency. We have, indeed, observed some cases with evidently true epileptic convulsions, and a marked lithæmic condition present in which, when the lithæmic condition was controlled, the convulsions ceased, and under a very moderate course of bromides have not appeared for two and three and a half years. We propose to consider this subject later at some length. In tumors of the brain we have twice observed a decided diminution in the frequency of epileptiform attacks. In hysteria this condition is often present, and its recognition and treatment produce results which are surprising. In general paresis, which is so often associated with lithæmia, the symptoms may be stayed, so to speak, by judicious treatment of this condition. Melancholia sometimes, more frequently, we think, than is generally supposed, occurs in the lithæmic, and is much relieved by the appropriate means. Lastly, we would refer to neurasthenia. The cases of this disease, which we have seen, have all been cases of suboxidation, lithæmia, oxaluria, or of a condition brought about by eye-strain. We have seen a number of such cases where the diagnosis has been made by believers in the existence of that disease, and have in every instance found that the conditions were as we have stated.

Articles in reference to the treatment of lithæmia, on the cause of lithæmia in females and its relation to menstruation, and on oxaluria, will appear in future numbers of this JOURNAL.

T. A. MCB.

In a recent debate before the Allg. Verein St. Petersburger Aerzte (Deutsche Mediz-Ztg., 8 Februar, 1883, s. 68), Dr. Kernig called attention to a symptom of the early stage of acute meningitis. It consists of a sudden tonic contracture of the flexor muscles of the lower extremities, and which can be evoked by placing the patient in an upright or sitting position, when the limbs assume a half-flexed position, and thus remain in a state of tonic contracture until the patient again reclines in bed, whereupon the contracture entirely disappears. The procedure can be repeated again and again. The phenomenon is often, but by no means necessarily, accompanied by contracture of the muscles of the neck and back. Dr. Kernig had observed it frequently in the tubercular meningitis of adults and in cerebro-spinal meningitis. Although contractures in meningitis are familiar phenomena, the diagnostic importance of this particular contracture so evoked is certainly novel. We commend it to American neurologists for observation.

German-reading neurologists will remember with pleasure the thoughtful and keenly analytical series of articles on the nervous system which were published by Flechsig several years ago in that admirable little journal, now discontinued, the *Archiv für Heilkunde*, edited by Prof. E. Wagner. These papers, as will be recollected, treated of what the Germans call *System-Erkrankungen*, an excellent term that ought to be Americanized, and for which we suggest the equivalent of *Systemic Diseases*, by which is meant diseases affecting a set of nerve-fibres, with or without intercalated or terminal masses of gray matter, and all of which are physiologically and pathologically identical. Dr. Paul Julius Möbins, of the same city as Flechsig, Leipsig, has lately issued a pamphlet in the same vein upon what he designates the primary chronic diseases

of the voluntary motor apparatus. He sets out with the proposition that progressive muscular atrophy, hereditary atrophy, pseudo-hypertrophic muscular paralysis, progressive amyotrophic bulbar paralysis, and amyotrophic lateral sclerosis constitute a nosological group of which the different members are anatomically and clinically alike, and are closely linked with one another by intermediate forms; that they are primary chronic diseases of the voluntary motor apparatus; that they are, therefore, systemic diseases. He then proceeds to pass the voluntary motor apparatus in detailed review, as follows:

(a) The intra-cerebral pyramidal tract, *i. e.*, the central gyri and the paracentral lobule, the underlying white fibres of the motor portion of the corona radiata, a certain portion of the internal capsule of the crura and of the anterior portion of the pons.

(b) The pyramids of the medulla oblongata and the pyramidal tract of the cord.

(c) The ganglion cells of the anterior cornua of the cord and homologous regions of the medulla.

(d) The anterior nerve-roots and motor nerves.

(e) The voluntary muscles.

This *system* of nerve-fibres can be effected in its whole length or partly, usually the latter being the case.

If the muscles only be diseased, there occurs the simple progressive muscular atrophy. The nervous system is here intact, as in the cases of Lichtheim, Friedreich, etc. Anatomically equivalent to this form is the hereditary atrophy and the pseudo-hypertrophic type (Duchenne, Charcot, etc). Clinically identical with this simple form are those cases in which the nerves share in the muscular degeneration (Cruvelhier), although Dr. Möbius admits that these are open to grave objections. Unquestioned, however, is that form in which the muscles, the nerves, and the anterior cornua of

the cord are degenerated, constituting the typical progressive muscular atrophy. Identical with this, except in location, is the progressive bulbar paralysis. A more rare transitional form is that in which, according to the cases of Erb and Schultze, the muscles and the anterior cornua are diseased, but the nerves are normal or not proportionately affected. The degenerative process may also extend into the pyramidal tract, both spinal and intra-cerebral. Generally it terminates, within the cerebrum, in the pons. In some observations the outer portion of the middle third of the crus has been found to be implicated. No mention has yet been made in any of the cases of the condition of the internal capsule. In one case, that of Kahler and Pick, the central gyri were, viewed macroscopically, atrophic. Implication of the lateral pyramidal columns is met with in ordinary progressive muscular atrophy with spastic symptoms (Mœli) in progressive amyotrophic bulbar paralysis (Leyden), in amyotrophic lateral sclerosis. The anatomical difference, the author suggests, between amyotrophic bulbar paralysis and lateral sclerosis is that degeneration of the lateral columns occurs occasionally in the former, always in the latter. In response to the query as to why the implication of the lateral pyramid sometimes gives rise to contracture, at other times not, the writer offers the explanation of Kahler and Pick: when the disease begins in the lateral pyramid and extends to the gray matter, we shall have contracture, whilst its origination in the gray matter and secondary extension pyramid-ward would not cause contracture but flaccid paralysis.

This is certainly strong meat, not fit for stomachs that thrive on neurasthenia and kindred dainty diets. We commend it, however, to our readers as embodying a *thought*—a thought, too, that is broad and profound. If true, it is the enunciation of a *law*. If not true, it may lead to the

truth—for we feel sure that it cannot be far astray—and will meanwhile serve excellent purpose in classification.

A case of *aphthongia* is reported by Prof. Ganghofner, of Prague (Prager Med. Woch., Nr. 41, 1882). *Aphthongia*—from *αφθονος*, mute, wordless—as our readers will remember, is a spasm of the muscles supplied by the hypoglossus, such as the sterno-hyoid, sterno-thyroid and hyo-thyroid, etc., differing from ordinary stuttering in the fact that it occurs whenever a voluntary effort is made to speak and renders speech impossible, whilst stammering simply impedes the articulation of syllables, and only at certain times and under certain circumstances, although these may be frequent. Prof. Ganghofner's patient was 19 years old. From childhood he had been at times interrupted in conversation by a sudden spasm of the tongue and the face, making speech impossible. The trouble would spontaneously improve for weeks at a time, and would then relapse. The spasm would usually occur at the beginning of the expression, lasting about ten seconds. The tongue would be pressed against the hard palate or between the teeth, whilst clonic and tonic spasms would simultaneously occur in the left lower facial-nerve territory. At no time would there occur, as in stammering, a repetition of the same sound, or the associated movements of this kindred affection. At the same time, the spasm, as in stuttering, remained absent when the speaking was automatic and without conscious intelligence, as in declamation of a poem that had been learned by heart or in singing a song. Bromide of potassium treatment yielded no result.

Dr. Thomas R. French (Archives of Laryngology, April, 1882), reports a curious case of choked voice due to contrac-

tion of the ventricular bands, as verified by the laryngoscope. Otherwise the larynx was perfectly normal in appearance. The voice had been gradually disappearing for three years, and, during the year previous to application, "it was only with the greatest effort that voice could be formed at any time, and then only the first word, or the first syllable of the first word, was sounded aloud; all that followed was in a strained whisper, or, as was usually the case, after the first word or two the voice was entirely cut off during that effort." In inspiration, however, and while laughing, speech could be moderately loud. After a year's treatment with electricity, blisters and topical applications, the voice has so improved that the patient can now speak during expiration. The author's explanation is that the voice being unsatisfactory at first, through some relaxation of the cords, this induced great compensatory strain upon the neighboring muscles, as a result of which the muscular structure of the ventricular bands hypertrophied so much that they over-contracted in expiration; whilst in inspiration, the muscular purchase for contraction not being so great in this situation, the same extra effect was not observed. Through the courtesy of Dr. French we have been enabled to thoroughly examine the patient in the hope of detecting some evidence of lesion of the central nervous system, but without success. Of course, however, this does not absolutely preclude the possibility of some cortical or medullary lesion, of which the contracture may be the only outward sign. Nevertheless, the strong probability is in favor of the malady being peripheral, or at least of peripheral origin. The precision of observation makes the case neurologically of value as indicating the possibility of the peripheral localization or origin of contractures that may be symmetrical, a consideration that has hitherto not been regarded except in obvious cases of joint disease.

Orchansky, according to the *Deutsche Medizinal-Zeitung* of February 8, has performed some interesting experiments upon dogs, in order to ascertain the influence of anæmia upon the electrical excitability of the cerebrum. The celebrated laboratory of Professor Munk, whence has come of late so much that is destined to live through a long scientific future, was the scene of these investigations. Orchansky at the outset ascertained the general fact that loss of blood to the extent of one-seventh of the whole vascular mass in the body altered the excitability of the cerebrum with the exception of the psycho-motor centres. He then found that this excitability was first increased and then diminished as the quantity of blood abstracted became greater. Thus, when the blood lost was from one-seventh to one fifth of the whole, the excitability was increased; but when the blood lost exceeded this proportion, the excitability decreased and was finally abolished. During the period of increased excitability the animal was restless and excited, whilst it was as if narcotized during the time of diminished excitability, although voluntary movements occurred. The writer believes that these changes were independent of the alteration in the blood-pressure that would be induced by large loss of blood. We shall certainly look forward with interest to the promised publication, *in extenso*, of these experiments in *Dubois-Reymond's Archiv.*, for we deem them of some importance.

Dr. Charles K. Mills, of Philadelphia, has sent us proof-slips of an interesting paper which he recently read before the Philadelphia College of Physicians, upon arsenical paralysis. Two months and a-half after the onset of the paralysis, the patient presented the following symptoms: "He presented no brain symptoms, and no disturbances of the special senses of sight, hearing, taste or smell. He slept fairly well until midnight, and was then usually restless and unable

to get into a comfortable position. He was much emaciated. Wasting of the limbs was extreme. In both upper extremities farado-contractility was decreased, but not lost; the diminution was much greater below than above the elbows. Below the elbows the faradic excitability was rapidly exhausted. To the galvanic current the reactions of degeneration were present, but not so decidedly as in the legs. Anodal closing gave stronger reaction than cathodal. With moderately strong currents tetany was produced at the anode. Both patellar-reflexes were abolished. * * * The cremaster-reflex was studied, and presented some interesting points. The retraction of the testicle, known as the cremaster-reflex, which has been thoroughly discussed by Dr. S. Weir Mitchell (*Journal of Nervous and Mental Disease*, October, 1879), can usually be awakened by irritation of a certain definite region of the thigh extending from the groin nearly to the knee. In young lads, as Dr. Mitchell has shown, this reflex is easily caused by touching or pinching the whole thigh, with the exception of a band of skin which nearly always may be represented as forming the postero-lateral third of the circumference of the thigh. Sometimes, however, the cremaster-reflex region is far less and sometimes far more extensive. It rarely extends below the knees, although, as stated by Dr. Mitchell, it may in the healthy boy include a large part of the calf of the leg. In adults the excitor region is often much restricted, and it may even be absent. Gentle irritation of the skin of the inner aspect of the right thigh and leg of the patient, as far down as the malleolus, caused very vigorous retraction of the right testicle. Sometimes, but not usually, both testicles were retracted. Similar irritation of the left thigh and leg led to movement of the left testicle, which was marked, but not as vigorous as that exhibited by the right from irritation of the right limb. Now and then, in making this test, the unilateral movement of the left testicle,

from irritation of the left thigh and leg, was followed a moment later by an imperfect retraction of the testicle of the opposite side. A similar effect was not produced in any of my examinations by irritation applied to the right limb; neither did excitation of one side cause motion in the other side only. On admission the surface temperature of each calf was 95° F. He usually complained of his legs feeling to him unduly warm. Late in November transverse white bands were observed across the finger nails about two lines from their posterior limits. The nails were not furrowed, but simply showed white markings. As the nails have slowly grown these lines have remained. The fingers and forearms were hyperæsthetic, but at the same time the patient could not determine with any accuracy as to one or two points on testing him with the æstheseometer. A similar condition, but more marked, was present in the feet, legs, and as high as the middle of the thighs. The muscles were very sensitive. Applications of hot and cold water were discriminated readily. Under applications of hot and cold water alternately, surface massage with cocoa-nut oil, ice bags to the spine, extract of ergot internally, tincture of belladonna, chloral and morphia, and good diet, the patient has been steadily improving."

Professor Erb, of Heidelberg, whose original mind has made its mark in so many departments of medicine, offers some new facts in regard to the etiology of herpes zoster (*Neurolog. Centrllbltt.*, 1 Dec., 1882). Apart from the cases which occur in conjunction with spinal lesions, vertebral lesions, phthisis, pleuritis, etc., he believes there are many instances in which the so-called "spontaneous" zoster is due to a certain specific cause, probably to a certain kind of infection. In support of this view he alleges the occurrence

of numbers of cases of zoster at certain times, the epidemic or half-epidemic appearance of it that has been occasionally observed, and the circumstance that a person is scarcely ever attacked by it a second time. Two cases are detailed, each of a mother and daughter, who were both attacked at nearly the same time with the disease. In the first history, the daughter, aged 35, was affected on May 6th, whilst the first symptoms showed themselves in the mother, aged 62, on May 12th. In the second history the daughter and mother were affected simultaneously.

The "Hammond Prize" of the American Neurological Association.—The American Neurological Association offers a prize of five hundred dollars, to be known as the "William A. Hammond Prize," and to be awarded at the meeting in June, 1884, to the author of the best essay on the "Functions of the Thalamus in Man." The conditions under which this prize is to be awarded are as follows: The prize is open to competitors of all nationalities. The essays are to be based upon original observations and experiments on man and the lower animals. The competing essays must be written in the English, French or German languages; if in the last, the manuscript is to be in the Italian handwriting. Essays are to be sent (postage prepaid) to the Secretary of the Prize Committee, Dr. E. C. Seguin, 41 West Twentieth street, New York City, on or before February 1, 1884; each essay to be marked by a distinctive device or motto, and accompanied by a sealed envelope bearing the same device or motto, and containing the author's visiting card. The successful essay will be the property of the Association, which will assume the care of its publication. Any intimation tending to reveal the authorship of any of the essays submitted, whether directly or in-

directly conveyed to the Committee or to any member thereof, shall exclude the essay from competition. The award of the prize will be announced by the undersigned Committee, and will be publicly declared by the President of the Association at the meeting in June, 1884. The amount of the prize will be given to the successful competitor in gold coin of the United States, or, if he prefers it, in the shape of a gold medal bearing a suitable device and inscription. Signed, F. T. Miles, M.D., Baltimore; J. S. Jewell, M.D., Chicago; E. C. Seguin, M.D., New York.

Death has played sad havoc in the ranks of American neurology of late. The recent death of Dr. George M. Beard, followed so quickly by that of his wife, points the same old, old tale of human ambitions and hopes blighted as ruthlessly as those of an insect. We do not need to dwell on the incidents of Dr. Beard's life, or upon his numerous writings; in these particulars, the weeklies have forestalled us, and news is stale before the quarterlies spread it. His life speaks for itself. As our readers know, we have had many occasions to differ with Dr. Beard. His ways of thinking have not been ours. But to his native parts, his intellectual scope and quickness, his industry, we have always endeavored to do justice, whilst we have also compassionated his unfortunate physical defect, which has doubtless placed him in many a false position. It is a terrible matter to hear of the sudden death of a man like Dr. Beard, who was in the very prime and fruitage of his life.

Our readers may have observed that the abstract department in the JOURNAL OF NEUROLOGY AND PSYCHIATRY has attempted to do what is not usually done in such matters—make each abstract a careful, concise review of the article

abstracted, with critical remarks *currente calamo*; at the same time, the most salient topics have been given a prominent place among the editorial items. Such a number of individual *critiques* has been a source of no little labor, far beyond what it would have been had we contented ourselves with a mere dryasdust outline of the matters abstracted, and the field covered by the abstracts has therefore been limited. It is the intention of the editors to make this department of much wider scope. To this end, they have a plan under consideration, of which the details are not yet completed; and in the interim they have deemed it best to omit all abstracts in this issue.

The Tuke Prize Essay will be continued in the ensuing numbers of this JOURNAL. The press of many engagements has prevented the author from preparing the matter for this issue.